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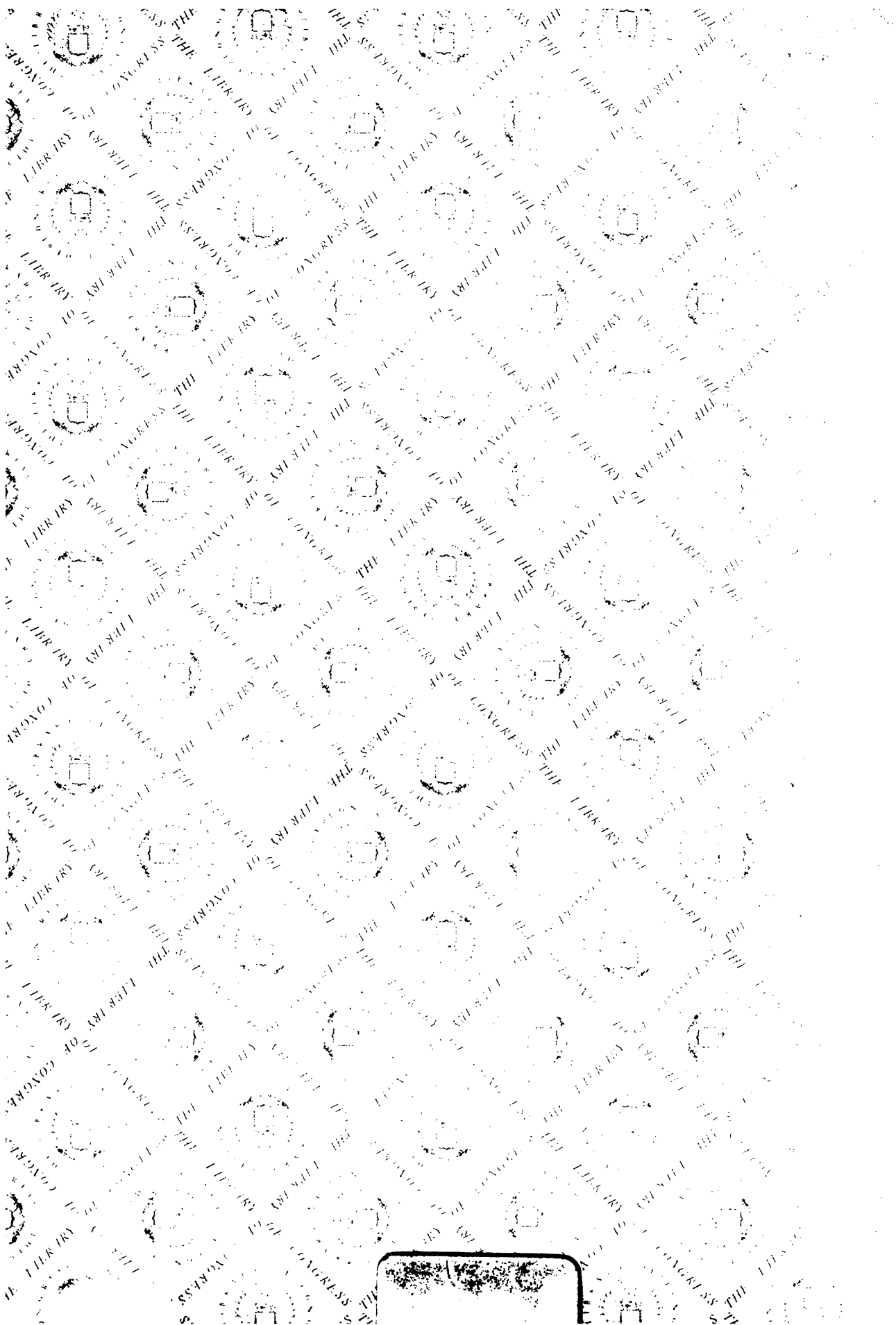
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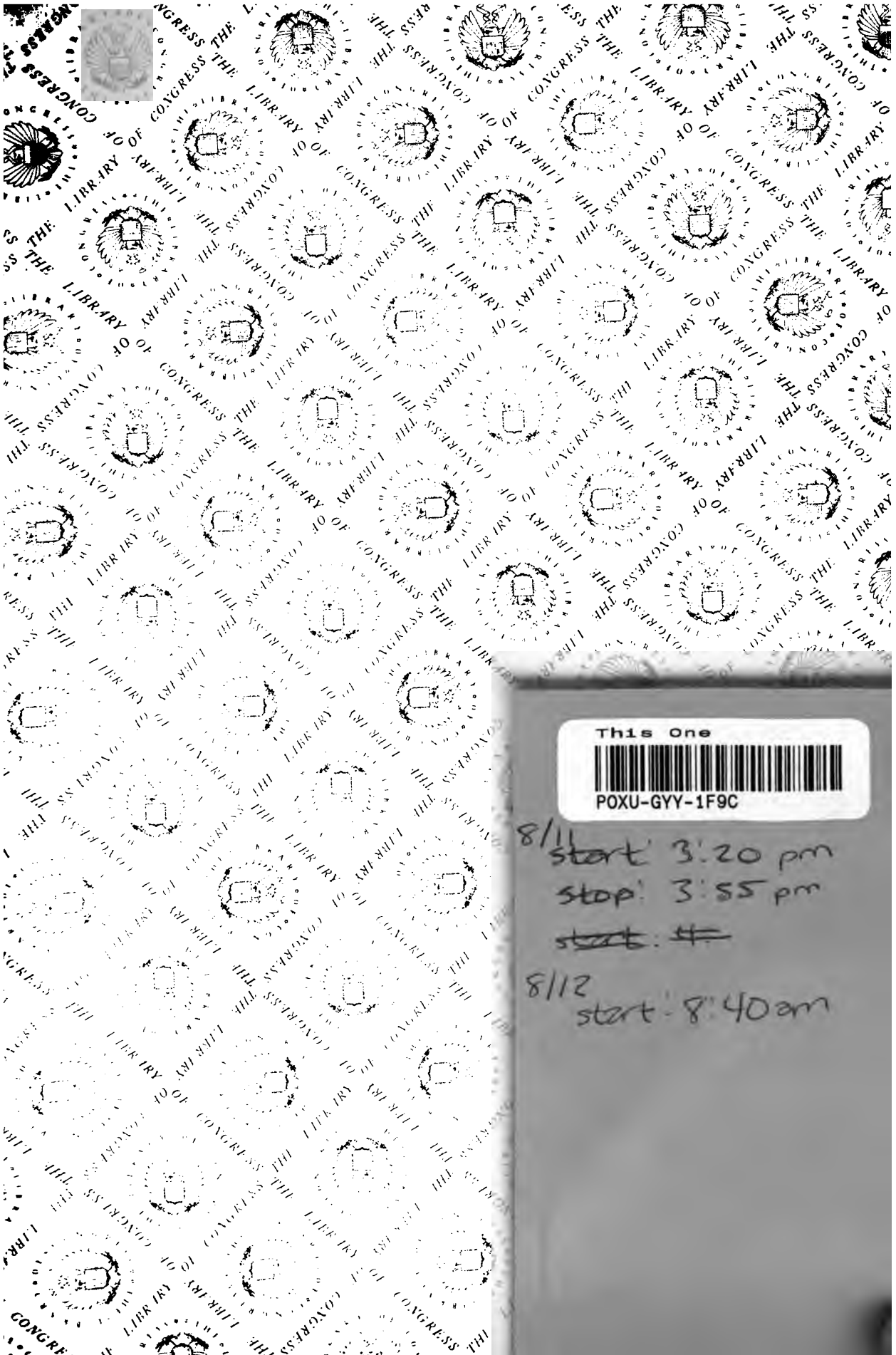
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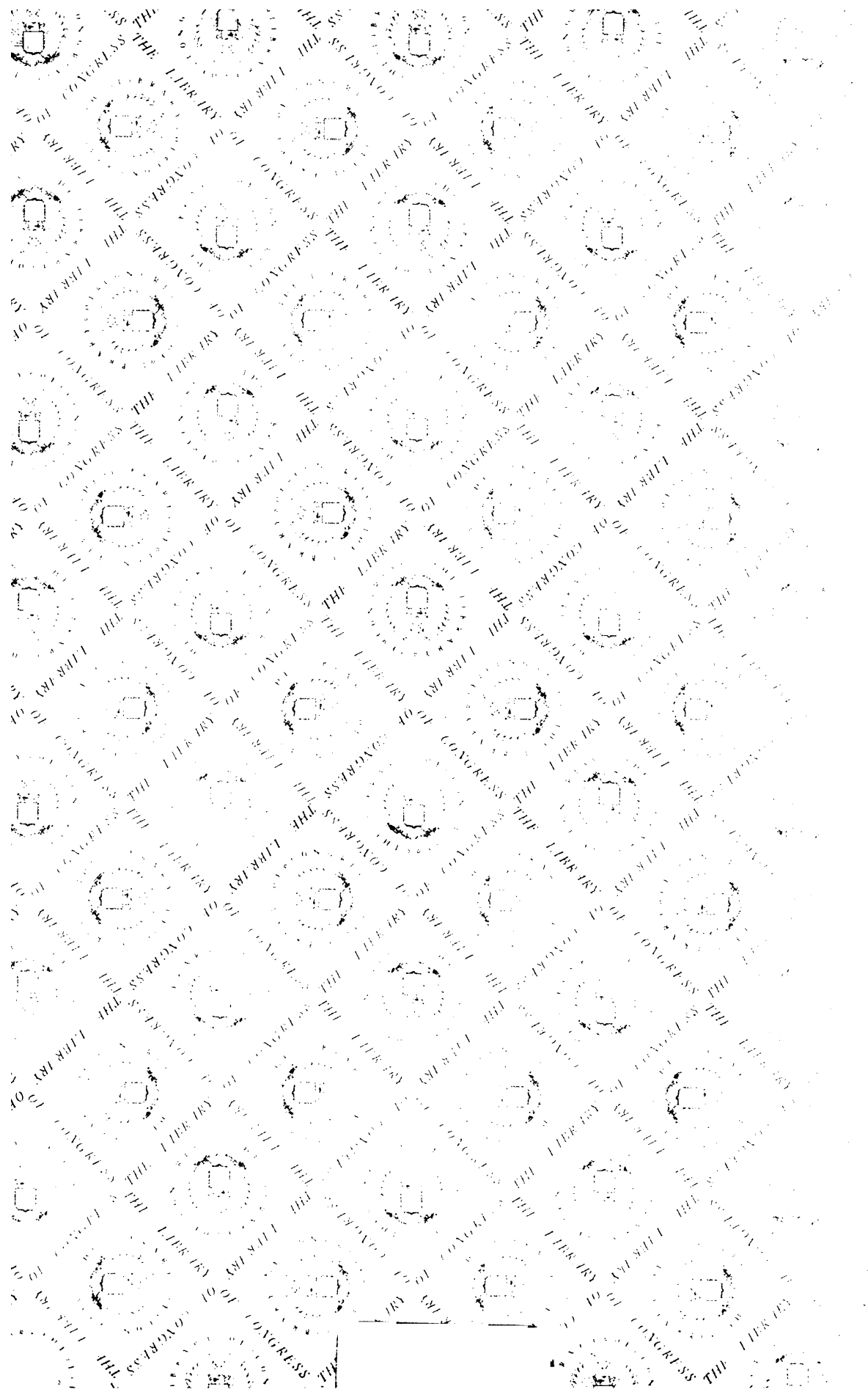
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NATURAL HISTORY.

✓

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TO OUR READERS.

At this season our Dissolution also took place—a Volume closed; and we offered ourselves for re-election in this our thirty-third Address:—

“LADIES AND GENTLEMEN:—

“You have for so many years been so kind and so unanimous in giving us your votes, and you have from week to week so favoured us with your applause and support, that we are almost seduced into that delightful state of self-complacency which you have entitled another of your representatives in Fleet Street to assume. We do not, however, yet dare to evince Mr. Punch’s modest assurance, and must, therefore, once more announce our principles before we again venture to ask for a continuance of your confidence.

“Ladies and Gentlemen, we are altogether Ministerial, for that word has no meaning unless it is—serving usefully; and we are altogether in Opposition, because we wage war implacably against all bad practice. As heretofore, it will be our strenuous endeavour to lighten your burdens in every way, except descending to twopence as our weekly salary. We shall continue to tax as heretofore your incomes, for although the tea duty has been reduced, we do not find that either type, paper, or literary aid is thereby sensibly diminished in price. In fact, we never had any better hope, than that being able to put an additional spoonful into the pot might enable all those articles to be supplied to us stronger by the producers without any extra charge.

“Advocates of liberal measures, whether in the form of water, manure, or wages, yet we are staunch conservatives in devising Shelters, Mulchings, and Coal-consumers. In truth, we feel disposed to head a *new* party, and to call ourselves “Inclusives,” for we fraternise with many nations—Poland, Turkey, Bantam, Guinea, Spain, and Cochín-China, all share our pens. If we had been in the House on the night that the duty was taken off sugar, we should have scarcely known which swarm to have joined; for though it cheapens Bee food, it tends to reduce the price of Honey.

“For the future, once more we pledge ourselves to you, our Constituents, to continue our efforts to make your Paths smooth, your Nests productive, and your Honey abundant.”

Thus concluding, we made our bow, and grateful are we to acknowledge the receipt of the following “Report of Election:”—

“J. OF H. WAS ELECTED, BEING SUPPORTED BY ALL THE OLD AND MOST OF THE
NEW CONSTITUENCY.”

INDEX.

- ANNEDEKSHIRE POULTRY SHOW**, 35
Acacia armata leaves yellow, 288
Acanthus montanus, 470
 Acclimatisation at the Antipodes, 299
 Accrington Poultry Show, 298
 Acer, the genus, 132
Achimenes—decaying, 118; Pink Perfection, Grandis, 271; Rose Queen, Aurora, and Stella, 382
Acropera armeniacae, 271
Adelaster albiventer spotted, 487
Æsculus, its kinds, 174
Agapanthus umbellatus, retubbing, 295
Agatheae celestis, 192; hardness, 188
Agave Saundersii, 137
Ageratum, variegated, 404
Aglaonema marantifolium var. *foliis maculatis*, 271
 Air-giving, 13, 94
Allamanda grandiflora culture, 218
Alcacia—metallica culture, 182; *Lowii picta*, 271
Amaranthus melanchollens—culture, 201; in boxes, 328
Amaryllis—for stove, 182; from seed, 388
 American fruits, new, 46
Ammonia in air and water, 479
 Amsterdam General Horticultural Exhibition, 280
Anemone—tubers, keeping a year unplanted, 290; angulosa, 470
 Annuals, climbing and trailing for window, 257
 Ants, 436
 "Apiary, The," 184
 Apple trees—not thriving, 201; caterpillars, destroying, 366; pruning, 366
 Apricot culture, 275
 Aquarium glazing, 242
 Aquatics—for stove tank, 236; for garden pool, 328; for small pool, 387
Arabis—culture of Golden, 306; *lucida variegata* as an edging, 483
 Arbor Vitæ, Siberian, 421
Arboretum v. Pinetum, 33
Arboretum, the, 89, 132
Ardisia crenulata culture, 137
Arisema papillosum, 157; *Wightii*, 361
 Arrangement of plants, 240
Arum palustre, 382
Asparagus—culture, French v. English, 9, 234, 269, 303, 405; beds, sowing, 200; planting, 254; sowing, 311; cutting, 488
Asphodels, 436
Astelia Solandri, 361
Atriplex rubra culture, 274
Aubrietia deltoidea, 14
Aucuba—leaves of male, 849; *japonica* (female), 361; *japonica*, 282
Auricularia—culture and frame, 92; in 1865, 357; removing offsets, 387; Alpine, 421
 Australian seeds, 181
 Axe, 263; proper form of, 252
 Aylesbury Ducks' bills, 61, 76
Asaleas—shoots and leaves turned brown, 130; Fascination, 157; temperature for, 275; syringing, 313; pontica, propagating, 436; after flowering, 387, 452
 Bacon, stove-room for, 278
 Bakers, 82
 Balsams, 365; culture of, 294
 Bantam—prizes, 314; laying soft eggs, 332
 Bantams—producing, 62; Rumkin, 222
 Barbadoes, seeds for, 239
 Barn for poultry, 42
 Baskets, hanging, plants for, 56
 Bateman, Mr., and the Chlawick Gardens, 244
 Bath and West of England Poultry Show, 454
 Bays, management of, 97
 Beans for succession, 75
 Bedding-out, 404
 Bedding and other plants, propagating, &c., 442
 Bedding plants, watering, 492
 Beds, planting raised, 212
 Bees—commotions and queen encasements, 18, 42, 61, 80, 105, 123; straw hives, 20; artificial swarms, feeding, 20; accident cleverly repaired, 40; supposed parasite, not swarming, 42; Ligurianizing an apiary, 60; regicide, 62; swarming v. storifying, 81, 221, 277, 391, 478; removing to distance, diminution of weight in autumn, Ligurians in Australia, 82, 299; dead in cells, superiority of Ligurian, 124; swarming v. non-swarming, keeping in Devon, 141; young and vigorous queens, queen not dead, 166; hive temperature, 183; removing old combs; re-using combs; obtaining most honey; Rev. W. C. Cotton; honey-taking in Assam, 205; early drones; crumbled combs; dysentery; Ligurian, 206; beginning to keep, 222; in a greenhouse, 222; Stewarton hives, 222; in Lanarkshire, taking honey in Central America, driving to avoid wax moth, 242; the opening season, 269; Egyptian, 260; increasing room for, 260; hives with entrances at top, 276, 352, 423; uniting very weak hives in spring, 277; on a house roof, colour of bee-house, putting supers on common hives, 278; transferring, stock inactive, artificial swarming, 299; honey-gathering from clover, dying, 300; commencing keeping, not working in glasses, raising a super, brood dying; straightening combs, 315; queen encasement and desertion of hives, 316; storifying, swarms influenced by season, 331; hives affected by damp, 332; does wild Garlic affect them? 351; ancient bee-book, 352; apiarian revival, 353; honey remaining fluid, ants in house, painting hives, chloroform for stupefying; transferring; supersing a stock; buying, 354; regicide among, hives deserted, 369; artificial swarms, early swarms, very weak stocks, 370; artificial swarm into a Stewarton-hive, enlargement of supers, 391; death of a queen, honey flavoured by onions, 392; artificial swarms, 407; results of storifying, as physicians, foul brood, drone killing, placing natural swarm in Stewarton hive, small drones, 408; destroying queen of a swarm, 409
 Bees—Continued.
 driven, natural swarms, 424; driving, over-manipulation, death of a queen; fertile workers, 439; hives with top entrances, foul brood not curable by excision, 457; notes about queens, spontaneous union of swarms, with extra antennæ, clustering, moving, 468; keeping in Devon, 477; two swarms in a Stewarton, in Australia, fertile workers, hives, putting on a super, 478; swarms uniting spontaneously, excessive swarming, persisting in swarming, 497; after swarming, putting on glasses, Ligurian and the vineyards, decreasing, 498
Begonia Dugswelliana, 271
Berberis aquifolium, planting for cover, 95
 Beverley Poultry Show, 495
Bilbergia olens, 361
 Bill, 263
 Birds—a home for, 141; introduced into Australia, 299; luring to a home, 300
 Birmingham Poultry Judges, 421
 Roller setting, 312, 405
 Boilers—portable, 269; heating by one or two, 404
 Boning fowl, 488
 Borecoles, variegated, for bedding in winter, 212
 Bosanquet, Mr., his lecture on window gardening, 270
 Botanic (Royal) Society's Show, 226, 286, 337, 411, 464
Bougainvillea speciosa, 162; culture, 97
 Bouquets, wedding, 518
 Bowling green, improving turf of, 387
 Box edgings, clipping old, 13, 493
 Boxes for climbers, 328
 Bradford Poultry Show, 100, 121; *Brahma* class at, 140
Brahma Pootras, 15, 17, 75, 124, 422; in Burmah, 33; in India, 59; weight of, 142
 Breda fowls, 316, 355
 Brentwood Poultry Show, 456
 "British Plants, Handbook of," 471
 Broccoli—throughout winter, 200; new white late, 404
 Buckinghamshire Duckers, 496
 Budgrigera building, 184
 Bulbs—done flowering, 218; a year unplanted, 322; management of, 329
 Bull's Nursery, 211; notes on his new plants, 265
 Bullfinches, teaching, 332
 Buenos Ayres Ducks, 79
 Butter rancid, 62, 82, 104, 184, 222; avoiding rancid, 124
 Bury Hill, 7
 CABBAGE—CULTURE, 425; PLANTS DYING, 493
 Cabbages—growing superior, 113; good, 419
 Cactus culture, 488
Caladium, wintering, 138
Calceolarias—Bird of Paradise, 51; under north wall, 75; management, 116; sowing herbaceous, 405; maulching, 427
 Camellias—worms in pots, 136; re-potting, 181; grafting, 274; temperature for, 275; syringing, 313; *Contessa di Gonda*, 382
Campylobotrys regalis and *refulgens* culture, 97
 Canadian wild flowers, 485
 Canaries—insects on, 142; losing feathers, 142
 Canker in fowls, 142
 Carnation seed sowing, 493
 Carnations—(tree), *Delicatissima*, Victoria, and Princess Alice, 51; for exhibition, 300; sowing, 329
 Carrots—forcing, 135; sowing, 216; soil for in frames, 349
 Caterpillars on White Thorn, 421
Cattleya quadricolor, 361
 Cauliflower—sowing, 326; culture, 347
 Celery, 317; good varieties, 117; estimate of sorts, 238
Celosia spleata sowing, 238
 Cement, stopping cracks in, 218
Centaurea candidissima, grub-eaten, 274
Cerastium tomentosum—from seed, 275; for edging, 483
Cherophyllum bulbosum culture, 126
 Chalk as a manure, 30
 Chamolais skins, 181
 Channel Islands, 387
 Charcoal as a manure, 289
Chellianthes fragrans, 55
 Cherries falling, 475
 Chickens—dying in hatching, 300, 332, 440; food for, 332; merits, appreciating, 367; quadrupedal, 407; mortality among, 440; among the, 494
 Chickweed, eradicating, 313
 Chiswick, a few words about, 318
 Chitty, the late Mr. F., 244, 261, 2-3; Chitty, Mrs., subscription for, 299; and her children, 395
 Chopping, the art of, 252
Chorosema cordata over-vigorous, 295
 "Chrysanthemum, its history and culture," 322
 Chrysanthemums—done blooming, 33; stems killed by burning sulphur, 213; Golden Ball, Venus, 271; (variegated) Sensation, 361; cuttings in May, 387
 Cinerarias—sowing for blooming at Michaelmas, 97; management, 116; stems decaying, 118
 Cistern, water flowing out of, 118
Clarkia integrifolia flore pleno, 382
 Clay, puddling with Jry, 218
Clematis Jackmannii, 51
 Climbers—for verandah, 55; for wall, 74; for house-front 97
Cobaea scandens variegata culture, 275
 Cochín-Chinas—house for, 142; cock dying suddenly, 184; extra prizes for, 220; Partridge, extra prizes for, 241; cockerel's legs paralysed, 300; taken to, 388; hen with enlarged crop, 392
 Cock's comb turned black, 62; frost-ed, 392; legs paralysed, 206
 Cockcoombs, 365; managing, 349
 Cocoa-nut fibre refuse, uses of, 7
Cologne fuscescens var. brunnea, 157
 Cole, W., death of, 69

- Colours, effective combination of, 376
 Combe Abbey, 441
 Concrete walks, 162
 Conifers—planting on mounds, 200; cuttings of, 328
 Conservatory—arrangements, 32; heating and glazing a small, 188; decorations for winter, 252; aspect for, 274; adjoining drawing-room, 328
 Coop, ornamental, 121
 Cork Poultry Show, 37
 Cotton seed, 158; sowing, 88
 Covent Garden Market, 14, 32, 55, 74, 96, 116, 136, 162, 199, 238, 256, 274, 294, 313, 327, 348, 366, 385, 404, 420, 436, 452, 474, 492
 Cow eating Cedar leaves, 184
 Crassula coccinea, repotting, 32
 Creepers—in stove over Ferns, &c., 240; for house-side, 387; for house wall, 421
 Crickets, destroying, 56, 498
 Crocuses—after blooming, 328; taking up, 475
 Cropping, double and treble, 377, 403
 Croquet, lawn, levelling, 32; ground, moss on, 138
 Crown East Court, 321
 Crystal Palace Bird Show, 164; Rose Show, commendations at, 178; Show, 399; Florists' Flowers at, 413; Rose Show, 483
 Cuckoo's arrival, 332
 Cucumber—pit, pigeon-holing, 187; beds, 197; growing, leaves blotted, 295; house construction, 386; trellises, 421; plants producing only female blossoms, 481; in frames, 117; heating a small house for, 177; ridge, 328; sowing, 454; gumming, 473
 Cumberland (West) Poultry Show, 33
 Currants, seedling white, 366
 Cutbush's Hyacinth Show, 253
 Cuttings striking, 273
 Cyanosis vittata, 118
 Cyclamens, summer treatment, 138
 Cypripedium—laevigatum, 382; color, 470
- DAISIES ON A LAWN, 239
 Dahlias—striking, 138; for exhibition, 200, 213; select dwarf, 313; preserving tubers, 344
 Damping-off, its cause, 243
 Daphne indica culture, 387
 Datura arborea pruning, 218; chlorantha culture, 418
 Delphinium chinense seedlings, 405
 Dendrobiums—Parishii, 51; Mr. Bateman's lecture on, 463; hedy-coum, 470
 Derby exhibition of birds, 101
 Derby Canary and Ornithological Society, 369, 423
 Deutzia—crenata, double, 306; gracilis, propagating, 387
 Devises, a day at, 329
 Diarrhoea in chickens, 424
 Dombeya Burgessiae, 51
 Dorkings—fattening, 20; cheek swollen, 62, 332; cock substituted for Cochin, 273
 Douglas, Mr., and Game Bantams at Manchester, 241, 276
 Dovecot, stocking a, 351
 Doves not hatching, 260
 Draba aizoides, 450
 Dracena—nobilis culture, 74; Cooperi leaves browned, 97
 Drainage, cinders for, 305
 Drayton Manor, 64
 Dublin Spring Poultry Show, 331
 Dubreuil on fruit trees, 421
 Duckwing Bantams, breeding, 104
 Ducks—Aylesbury, eggs, 184; legs paralysed, 278; laying soft eggs, 300; prime age of, 422
 Dumfries Ornithological Show, 36
 Dunhill drainings as a liquid manure, 426
- EARTH CLOSETS, 408, 440
 Edgeweiss, 138, 192
 Edging-Iron, 263
 Egg within egg, 315; double, fertile, 422
 Eggs—sex of, 59, 75, 76; jars for preserving, 62; price of new, 75, 65; vitality of, 79; superior producers, 2; large supply, 82; price of, 119
- Eggs—Continued.
 hens laying soft, 124; and poultry, home supply of, 161; deserted for a time, 166; keeping for hatching, 204; wholesale price, 206; annual produce from a hen, 206; in airtight jars, 219; Irish trade in, 220; after a freezing temperature, 222; injured by frost, producers of large, 278; failing to hatch; preserving, 332; passage protruding, 332; preserving birds', 384; hens eating, 407
 Elm trees, heading-down, 96
 Endive culture, 387
 Engines, garden, 269
 Entomological Society's Meetings, 71, 192, 307, 345, 433, 490
 Epiandrum dichromum var. amabile, 157
 Epiphyllum culture, 192
 Erica hyemalis and gracilis culture, 199
 Espallier Apple and Pear trees, pruning, 239
 Essex Poultry show, 276
 Eucharis amazonica culture, 163
 Evergreen cuttings, 32; list of hardy, 32; planting, 296; for lawn, 329; new, 343
- FALCONER, DR. HUGH, 234
 Fernery—adjoining dwelling, 218; constructing and arranging, 493
 Ferns—hardy, for exhibition, 14; (hardy), how I collected them, 21, 66, 84, 153, 195; removing dead fronds, 162; compost for, 181; in case moulding; Bird's-nest, fronds decaying, 295; case, draining, fungus in soil, 346; habits, 433; watering hardy, 349; Hare's-foot, managing, 475
 Ficus elastica, potting, 96
 Fife Ornithological Show, 36
 Figs—forcing, 31; pot-culture of, 268; dropping, 313; tree not bearing, 387; propagation of, 409; falling prematurely, 433, 437; falling, 492; the Castle Kennedy, 419
 Flannel, vegetable, 334
 Flèche cock's ear-lobes, 478
 Florists' flowers, no prizes for, 151
 Flower—shows, management, 10; garden plan, 214, 341, 362; beds and borders, position of, 264; planting, 274; box and vase, Hayman's, 266; pots, size of, 306; guttered, 345
 Flowers, arrangement in border, 163
 Flues, heating by, 25
 Forcing-house, economical, 156
 Foreman's duties in a gentleman's garden, 126
 Forest fowls of England, wild, 389
 Forking, use of frequent, 54
 Form and colour, 279, 322
 Fowl dung, 387; manuring with, 200
 Fowl-house, Ivy round, 316
 Fowls—mingled, 184; best age for breeding, 206; food for, 206; in confined space, 222; unmated, 222; feeding for exhibition, 222; neck swelling, 332; disordered, 332; soil for yard, 332; trespassing, 354
 Frame on viney-border, 295
 Frogs, destroyers of woodlice, 170
 Frost of April 30th, 395
 Froth insect, 462
 Fruit—at New York, 3; affected by soil and climate, 88; trees, neglected, 257; summer pruning, 313; in cultivated and other ground, 373; Wise, 472
 Fruits, succession of, 75
 Fuchsias—potting, 96; Lucretia Borgia and Fantastic, 158; dropping their flowers, 161; for exhibition, 213, 257; grafting, 274; insects, destroying, 275; twelve, 454; select, 492
 Fumigating, 328
- GAME FOWLS, 392; BLACK AND BROWN-BARSTED, 184; cock, redubbing, 332
 Gapes—cure of, 242, 424
 Gardener, training for, 97; finding gardeners, 313
- Gardeners—during illness, 6; dwellings, &c., 73; dwellings and clothing, 130; number of working hours for, 233, 266; Saturday half-holidays, 268; claiming plants, 427
 Gardeners' Benevolent Institution, 248, 344
 Gas, heating by, 118
 Geometric beds, 74
 Geranium—seed, sowing, 97; cuttings in turves, 237; Mrs. Pollock, striking, 296; (sonale), Venus, 470; cuttings, packing, 474; in rich soil, 475
 Geraniums—for window, 161; Mrs. Pollock, striking cuttings, 218; for exhibition, 218; (bedding), suitable for planting together, 239; turf as a substitute for potting, 273; syringing, lanky, 275; Zonale, for pots, 328; ill-managed, 487
 German paste for birds, 392
 Gesneras, resting, 14
 Gishurst compound, 387; v. scale, 168
 Glass, glass in a fowl's, 76
 Gladioli—culture, 47; select, 117; in pots, 200
 Glass—excessively brittle, 253; for horticultural purposes, 301; for greenhouse, 349
 Glazing without putty, 91, 112, 157, 173, 194
 Gnaphalium lanatum, 475
 Gold fish diseases, 42
 Gooseberries, raising from seed, 131
 Gooseberry caterpillar—preventing, 228; destroying, 404
 Grafting, curious result, 228; the Elm on the Oak, 291
 "Grape Vine, Practical Treatise on," 191
 Grape—Muscat de Sarbelle, 52; growing, novel feat in, 89; bunches becoming abortive, 240; Foster's White, 329; obtaining early from wall, 254; thinning, 366; diseased, 386; falling, 420; packing for travelling, 454
 Green Gage Plum—crop in pots, 437; trees overloaded, 493
 Greenhouse—heating a small, 25, 32, 137, 274; ventilating, arranging, and shading, 182; removing, 328; arrangements, 349
 Guano liquid manure, 366
- HADSON HOUSE, 231
 Hamburgs—comb bending, 142; Golden, 165; with pale faces, 458
 Handbarrows, 224
 Hants (North) Poultry Show, 439
 Hares and rabbits, protecting trees from, 88
 Hatchet, 263
 Hatching—temperature, 62; this season, 422
 Hayman's Albert vase and flower-box, 268
 Heaps in gardening, 452
 Heaths not flowering, 75
 Heating—by hot water, 117; modes of, 209; small houses, 256
 Heckmondwike Poultry Show, 17
 Hedge—plant for, 117; planting in June, 436
 Hen-coop—ornamental, 165
 Hens—eating chickens, 184; crop, glass in, 354; swollen breasts, swollen abdomens, 370; not laying, 166, 440; swallowing, with difficulty, 458; managing broody, 478; pecking their eggs, 478
 Hepatica angulosa, 470
 Hives, Stewarton, 242
 Holidays, 12
 Holland and Belgium, notes in, 355, 371
 Holly—hedge, trimming, 162; cutting variegated, 257; propagating the Porcupine, 349
 Honey suckles, planting select, 225
 Horseradish in Peach-border, 200
 Horticulture a school, 26
 Horticultural (Royal) Society, 43, 207, 444, 463, 484; Primula Show, 26; weekly Show, 52, 69, 110, 129, 173; 227, 268, 286; Assistant Secretary, 65, 87; its early Tulip Show, 88; memorial about exhibitions, 108; exhibitor's letter to Council, 126, 159; balance sheet of, annual meeting, 145; spring
- Horticultural Society—Continued.
 meetings, 150; exhibitors' memorial, 150; Floral and Fruit Committees, 210, 249, 284, 318, 358, 397, 426; prizes paid by, 311; scientific meeting, 250, 284, 339, 359, 396, 428; Hyacinth culture, 293; Show, 304, 375, 444; International Fruit Show, 306; meetings in 1866, 410; Floral Decoration Fête, 413; Pelargonium Show, 430
 Horticultural exhibitions, effects of, 44
 Horticultural exhibition at Amsterdam, 280
 Horticultural (United) Society, 189, 304, 445
 Horticulturists, dearth of good, 310
 Horse-Chestnut, its kinds, 174
 Hotbeds—a word on, 339; for cuttings, 365
 Hothouse shelves, 437
 Houses, sunk, 14
 Hovea pungens major, 361
 Howl, a, 151
 Hyacinths—worms in pots, 75; in glasses, failure of, 176, 190; forced, 256; Thorwaldsen, 353
 Hydrangea—culture, 443; flowers varying in colour, 480
 Hypocistes sanguinolenta, 382
- ICE—COLLECTING, 12, 180; PACKING, 95; house, opening, 436
 Icelanders, 100
 Impatiens Hookeriana culture, 218
 Implements—garden, 223, 262; management of, 306
 Incubator, Crook's, 477
 Indian oorn for poultry, 392
 Indian-rubber-Plant shedding its leaves, 56
 Ingram, testimonial, 171
 Insects, destroying, 169, 273, 311, 405
 Ionopsis paniculata culture, 39
 Ipomoea, hybrida marginata culture, 201; Learly pruning, 295
 Iresine Herbstii, 271
 Ivy—its varieties and culture, 85; for wall, 117
- JAPANESE—CONIFERS, 45, 70; EVERGREENS, NEW, 343
 Jedburgh Show, Pigeons at, 77, 104
 Jerusalem Artichokes hard, 14
 Judges of plants, 70
 Judging plants, 111
- KELSO POULTRY SHOW, 57
 Kendal Poultry Show, 57
 Kew Gardens, Sir W. J. Hooker's report, 340
 Kidney Beans, forcing, 160
 Kitchen-garden cropping, 425; aspect and formation, 432
 Kitchen gardening, 460
- LABOUR POWER, 72
 Lachenalias, culture and selection, 378
 Laelia praestans, 271
 La Flèche fowl, 166
 Lancashire, weather in 1864, 50
 "Land and Sea," 190
 Langstroth, the American apiarian, 79, 102
 Lapageria—rosea culture, 97, 200, 275; soil money, 492
 Lark's song weakened, 278
 Laurels, cutting-in, 295
 Laurustinus culture, 97
 Lavender, disease, 281, 305
 Lawn grass sowing, 32
 Laying, promoting, 42
 Leontopodium helveticum culture, 138
 Lice on chickens, 206
 Lillium—culture, 47; weakly, auratum culture, 87, 239; sale of, 436; lancifolium culture, 87, 217; does it degenerate? 190; giganteum propagating, 274; weakly, 386; culture, 387; after blooming, 475; planting out, 475; not flowering, 492
 Lily of the Valley bed, 228
 Limewash for Currant trees, 32
 Linings for pits, 180
 Liquid manure, 426, 460; making 182; applying, 349

Limochilus Horsfallii, 51
Liverpool Flower show, 346
Lobelia speciosa—sowing, 183; in boxes, 338
Lomaria gibba, 163
 Lombard's (Mr.) garden, Dublin, 486
 Londonderry Palace Gardens, 463
 Longing for spring, 169
 Longtown Poultry Show, 130
Lonocera aureo-reticulata, 239; changed by sulphur-burning, 213
Lophospermum magnificum culture, 120
Lacuna gratissima culture, 302

MANOWLA (BERBERIS) AQUIFOLIUM
 PLANTING, 31; FOR COVER, 95
 Maidstone Gardeners' Society, exhibition of, 264
 Malays on the table, 164
Manettia micans, 157
Manetti recollections, 286
 Mannering the air, 479
 Maples, 132
 Markets, visits to foreign, 292
Maedevalia Tovarenalis, 361
Maurandias, training, 138
 Means and room, 236
 Mediterranean, notes from the shores of, 158
Melons—culture, 28, 45, 67; falling, 75, 328; planting in bed, 327; lining frame, 329; grafting, 361; young turning yellow, 446
Mesembryanthemum compost, 405
 Meteorology of 1864—Weston-super-Mare, 69; Warrington, 131
Mignonette—tree, 274; Belgian, 356
 Mildew, its cause, 243
 Milk, condensed, 104
Mimulus, double-flowered, 470
 Mistletoe propagation, 14
Monochæstum diceranthum, 361
Morenia fragrans, 157
 Moreton Hall, 90
 Moss on lawns, 181
 Mowing machines, 262
 Mulberry tree in a pot, 313
 Mulching, 364, 473; flower beds, 329
 Mushrooms—in a cellar, 188; beds management, 115, 326, 385; spawn, vagaries of, 173; falling, 295; growing thin, 256; cold, 265
 Mussett's heating apparatus, 181

NANTWICH POULTRY SHOW, 139
 National Columbarian Society's Show, 101
 Nectarines—management of Down-ton, 387; setting springly, 397
Nemesis compacta, 162
 Nests—earthenware pans for, 351; for hens, 390; mice in hen's, 440
 Nets over wall trees, 218
 New Zealand—seeds from, 217; emigrating to, 339; Flax seed not germinating, 475
 Nightingale's arrival, 332
 Night-soil, utilization of, 307, 337
 North British Pigeon Show, 37
 North Hants Poultry Show, 476

OAKS NOT THRIVING, 201
Odontoglossum Pestoretii v. *splendens*, 382
 Ogil, Mr., death of, 321
 Oleander, scale on, 387
 Onion culture, 265
 Orange trees—in tubs, managing, 257; grafting, 328; Tangerine, 329
 Orchard-house—in Scotland, 118; dressing, 198; my, 266, 287; trees shedding their fruit, 401; stopping shoots, 405
 Orchard planting in Ireland, 421
 "Orchidaceous Plants, Select," 322
 Orchids—in flower in December, 7; flowering in winter and spring, 174; for greenhouse, 228; in cool houses, 279; cool growth of, 306; lecture on, 359; culture in low temperature, 400
Ornithogalum thyrsoides after blooming, 474
Oxirandria fenestralis culture, 15
Oxalis corniculata rubra, 253

PANET, WHITE ZINC, 130
 Paisley Ornithological Show, 35
 Pailing, fruit trees against, 420
 Palms as room plants, 343

Pampas Grass culture, 329
Pandanus javanicus variegatus culture, 96
 Pansies decaying, 454
 Paradise stock, propagating, 200
 Paris Poultry Show, 50, 76
 Paris Pleasure-grounds, 382, 489
 Parrot—stripping off its feathers, 104, 424; staggering, 142; management, 204, 300
 Parsnip sowing, 216
 Partridge Cochlin eggs, hatching, and Buff in same run, 300
 Partridges, food for young, 478
 Passion-Flower jelly, 359
 Paul's (W.) spring flowers, 250
 Pavias, 174
 Paxton, Sir Joseph, 446
 Pea—leaves injured, 349; Weevil, 366
 Peach—tree forcing, 33; blossoms protecting, 83; buds falling, 00; grafting stocks for, 117; shoots various, 324; syringing, 313; bloom falling, 313; leaves falling, 437; trees gumming, 475; tree shoots, 380; green fly on, 386; leaves curled, 406; and Nectarine trees, bearing points, 414; house glass, 328
 Peach-pruner, the modern, 63, 83, 107, 144, 185, 234, 263, 324, 379, 416, 459
 Pears—ripening late, 27; Beurré Clairgeau, 52, 88; for pyramids, 55; on thorn stocks, 136; scale on, 137; on quince stocks, 142; how to keep, 170, 188; for S.S.W. aspect, 239; leaves diseased, 387; trees, espallier, 454; failure of, 462
 Peas—early, 15, 386, 419, 436; for succession, 75; growing superior, 113; in turves, 135; on light soil, 136; for autumn, 200; preserving from mice, 228; early, forwarding and protecting, 283; sowing, 328; Veitch's Perfection, 387; late, 432, 454; new early, 467
 Pease, F. R., death of, 477
 Pelargoniums—of 1864, 2; Indian Yellow, 51; leaves spotted, 118; forcing, 199; stopping, 386; bedding, report on, 414, 450, 468, 482; Amy Hoag, 470; select, 432
 Pentstemon sowing, 238
 Perennials from seed, 493
 Perilla sowing, 212
 Perth Poultry Show, 58
 Pest, garden, 323, 345
 Petunias, Jubilee and Charming, 157; potting, 161
 Pheasantry, floor of, 278
 Pheasants—with wounded wing, 206; gold and silver, 221; rearing young, 370
 Phormium tenax seed not germinating, 475
 Photinia serrulata, 181
 Picea pinus—fine specimen, 181, 201; large, 266, 303
 Picotees for exhibition, 200
 Pigeon-holing pit walls, 190
 Pigeons—diseased, 49; megrims in, 77; and hawks, 77; forsaking their house, 82; varying in colour, Icelanders, 100; at Jedburgh Show, 104; Fantail, 204; distinct varieties, 241, 314; in confinement, 242; laying four eggs in four days, 275; sick, 278; eccentricities of, 297; at Devizes, 329; and Rooks, 330, 350, 389, 456; eyes watering, 354; breathing with difficulty, 369; giddy, 370; diarrhoea in pairs, 392; to tell cocks from hens, 458; buff and black, 478
 Pig food, 440
 Pine-apple culture, 405
 Pine-stove construction, 288, 309, 391
 Pinus—maritima and austriaca for the coast, 239; excelsa, cutting its shoots, 366
 Pits—sunk, 13; construction of, 187; sunk, without fire heat, 227
 Planting ornamental shrubs, &c., 31
 Plants—(My) and how and where I found them, 225, 338, 431, 470, 487; of many sorts in one house, 239; new, at Bull's Nursery, 265
 Pteroma elegans leaves scorched, 387
 Plum—the Mirabelle, 176; trees, caterpillars on, 350
 Poinsettia pulcherrima culture, 5
 Poland fowls, hardest of, 82
 Poles, The, 377
 Polyanthus, removing, 475

Poplar cuttings, 56
 Potatoes—produce of, 10, 48, 91; what is a bushel of, 11; early, 15, 444; culture, 22, 68, 127; and merits, 49; Fluke and Lapstone Kidney, raising early, 88; Early King, 93, 108, 182; forcing, 134; manuring, 218; early ten-week, 230
 Pots—price of garden, 55; size at shows, 218
 Potting 96; preparations, 73
 Poultry—keeping from a commercial point of view, 16, 38, 56, 76, 99, 119, 142, 163, 201, 220, 240; in confined space, 42, 368; profits, 57, 75; house, size of, 82; Company, a joint-stock, 97, 138; supply for London, 116; Club, 118, 139, 142, 163, 202, 259; for table and egg-producing, 124; cottager's pay for rearing, 124; Shows in Lancashire, 142; Shows, thought on, 182; and egg supply, 202; Shows, more classes at, 203; Judges, 219; schedules for shows, 220, 259; extensive keeping, 258; and Egg Company, 258, 276; Judges, appointment of, 275, 330; Club Judges, 314; exhibitors' grievances, 380; show, a metropolitan, 476; purchasers, a warning to, 496
 Primroses—Double Chinese, propagating, 295; Smith's double Chinese, 305
 Primula farinosa, 493
 Propagation and management of bedding plants, &c., 376
 Prunella pyrifolia, 51
 Pullet's intestines protruding, 142
 Putty—removing old, 55; uses in glazing, 386
 Pyracantha not flowering, 405
 Pyrethrums, Mr. Salter's, 514

QUINCE STOCK, PROPAGATING, 200

RABBITS, 60; HIMALAYAN, PHENOMENON IN, 102; Lop-eared, points of, 104; eating evergreens, 110; neglecting their young, 181, 221
 Radiata, forcing, 32
 Raillardia ciliolata, 470
 Ranunculus tubers, keeping a year unplanted, 290
 Raphiolepis japonica v. integririma, 382
 Red spider, destroying, 491
 Rhododendron—soil suitable for, 186, 231, 303, 363; eximium, &c., 328, 329; manure for, 350; naming, 410; Waterer and Godfrey's Show, 413; grafting, 436; at Regent's Park, 433; Princess Alexandra, 470; ill-shaped, 493
 Ribbon-border, 193
 Ridging, 30
 Rock plants, 372
 Rockwork, 333
 Rollers for outside shades, 200
 Room, plants in, 181
 Rosery, laying out, 182
 Rose show, continental, 487
 Roses—management in the north, 5; in north of Ireland, 10; dressing stems, 10; of 1864, 43; for pots, 74; Climbing Devonensis, 93, 108, 131, 152, 189, 233; gossip about, 109; in pots, 117; standard, 117; manure for, 136; seed-sowing, 137; Bernard Palissy, 167; Celine Forestier, 158; transplanting, 162; pruning climbing, 162; soil for, 162; pegging down, 182, 216; potting for early forcing, 182; pruning, 198, 199; replanting, 199; dwarf in bed, 201; potting cuttings, 218; Triomphe de Rennes and others, 270; Manetti, 286; Devonensis v. climbing Devonensis, 290; fumigating, 294; select pot, 296; Princess Mary of Cambridge, 329; liquid manure for, 329; new, 336; stunted shoots on, 350; Maréchal Niel, 361; in groups, 393; lists of, 396; rats destroying, 401; Ophir in Manetti stock, 405; Gloire de Dijon leaves blotched, 405; Gloire de Dijon on Boursault stock, 433; manuring, 454; list of hardy, 466; leaves blotched, 474; cuttings in water, 493
 Roup, 62, 498; is it infectious? 554

SAFFRON CROCUS NOT BLOOMING, 14
Salvia—nemorosa, 163; aurea sowing, 238; argentea, 353; splendens for August, 387
 Salt applied in excess, 338
Saponarias, 163
 Saahas, opening, 401
 Saws, 263
 Scarlet Runners without stakes, 419
 Scurf on Cochlin-China fowls' legs, 82
 Scythia, 263
 Sea-kale after forcing, 254
 Seashore, gardening near, 340
 Seeds—sowing in private gardens, 95; vitality of, 322
 Sewage—and fruit, 105; house, its effects and management, 167; irrigation, 194; earth a deodoriser of, 382; as a manure, 460
 Shears, 263
 Sheep dying after shearing, 408
 Shell Parrot building, 184
 Sieber, the plant collector, 481
 Silk worms, effect of aromatics on, 190
 Silver Pheasant laying, 276
 Silver Tree, 239
 Skeletonising leaves, 27
 Skimmia japonica, 181
 Snow-storing, 54
 Snuff in tree-paint, 137
 Soap-suds, 257, 474
 Soil—consolidating over fruit tree roots, 160; utility of loosening, 111; improving sandy, 117
 Solla, getting under cover, 73
 Somerford vineria, 4
 Sora's poultry establishment, 222
 Spanish fowls, 20; fowl rose-combed, 62; cock's face excessively developed, 166; hens bald, 370
 Spring-longings, 291
 Spring cold weather, effects on chickens, 437
 Starling, teaching to talk, 424
 Stephanotis floribunda—culture, 96; leaves shrivelling, 200
 Stocks, species and varieties, 421
 Stoves, brick, 208
 Strawberries—in the north, 24; plants, grubs destroying, 74; La Constante, 112, 128, 172, 207, 232, 246, 287; forcing, 110, 135, 164, 197, 255, 347; Empress Eugénie, 152; runners, selecting, 181; shelves, Mr. Abbey's mode of placing, 182; plants not flowering, 196; pots, turves for, 212; in Dorset, 225; houses, Mr. Abbey's, 229; exporting, 239; unfruitful, 256; best position for forcing, 290; blind, 304, 327; cross-breeding, 317, 375, 396; insects on, 328; barren, 341; treated as annuals, 345; culture and cross-breeding, 362; propagating from barren, 446; Duc de Malakoff, 461; failure of crops, 462; culture, 471; Lord Clyde, 490
 Suffolk Poultry Show, 278
 Sulphur fumigation, 397
 Swainsonia occidentalis, 51
 Swans, rearing young, 440
 Swiss gardening, 26
 Syringing, 262
 Syringing, 492; Grapes, 467

TARPAULING, RENOVATING, 366
 Tasmanian Horticultural Exhibition, 51
 Tea culture, 137
 Temperature—regulating, 328; of ground, 350
 "The break in our circle," 261
 Thorne Poultry Show, 476
 Thrips on Ferns, 56
 Tiffany-houses, 349
 Tordmorden Botanical Society, 466
 Tortoises, 124
 Toulouse Geese as layers, 332
 Tradescantia zebrina culture, 200
 Training-trellises, 356
 Trees and shrubs, protecting from hares and rabbits, 85, 95; deciduous, 89, 132
 Trenching, 6
 Trichomanes speciosum fronds browned, 239
 Tritoma grandis, 323
 Tritonia aurea, 14
 Tropæolum tricolor culture, 97
 Tulip exhibition, Henderson's 339

Tulips—early, short-stalked, 257; after blooming, 388; removing flower stems, 397; double-bulbed Van Thol, 437
Turkey breeding and management, 390
Turkeys—at exhibitions, 166; rearing young, 424; cleavers for, 424
Turnip—sowing, 216; fly, 491

VALLOTA—EXIMIA, 51; PURPUREA CULTURE, 97
Van Houtte's Nursery, 371
Variations, vegetable, 411
Varieties, raising new, 344
Vases, planting in, 340
Vegetable Marrows, 328
Vegetation, theory of, 83
Veitch's Nursery, Chelsea, 171, 213
Vellozia candida, 470
Ventilating, 55; of orchard-house, 436
Verandah, plants in, 474
Verbenas—from root-cuttings, 181; Annie, 158; wintering, 162; for exhibition, 200, 218, 313; Popular, 271; George Tye, Charles Turner, Queen of Pinks, 361; cross-breeding, 406
Vermin trap, prize for, 241
Verschaffelt's Nursery, 372
Vinery—profits, 14; heating, 132;

VINERY—Continued.

replanting, 257; frame on, 295; near Hitchen, 327; Curate's, 405
Vines—distance between, 4; syringing, 14; forcing, 81; Muscat Hamburg, 32; lifting roots, 68, 74; forcing, at Inverness, 74; cuttings, 74; planting, 74, 118; for cold vinery, 75; compost for, 96; planting over sue, 118; standards in pots, 118; borders, aëration of, 125; in pots at Combe Abbey, 228; in bad condition, 137; overheating roots, 137; in pots, 162; border, renewing, 162; making, 182, 257; turf for, 239; lifting, successful, 178; syringing, 181; leaves warted, 256; crumpled, 257; mealy bug on, 286; leaves brown, 200; showing fruit indifferently, 200; diebudding, 200; early dressing, 216; in pots bleeding, 218; border on clay soil, 270; temperature for, removing laterals, 274; breaking, stopping bleeding, 275; breaking, treatment, 313; for greenhouse, 349; in pots not fruiting, 350; borders, manure on, 405; applying manure water, 405; culture, shoot stopping, 410, 454, 467; leaves scorched, 421; leaves, 405; stopping newly-planted, 470; inarching Muscat on Tokay, 475
Visit to "Y. B. A. Z.," 93

WAITZIA GRANDIFLORA, 271

Walks—drainage for terrace, 328; concrete 493
Wall, white-washing, 137
Wall-border, plants for north, 437
Walls for garden, 74
Wardie Lodge, 156
Warehouse converted to a greenhouse, 33
Washing white fowls, 166
Waste slip, planting, 209
Water—for fowls, 42; barrows, 262; can hard be improved? 317; Cress culture, 366; softening hard, 358; to what plants prejudicial, 760; importance of good supply, 373; Lily planting, 454
Waterer's American plants, 433
Watering—night, 9; pots, 262
Waterproofing, 420
Weather, effects of on chickens, 258, 298
Weeds—destroying, 55, 435; in paved yard, 437
Week, work for, 11, 29, 32, 71, 96, 114, 133, 159, 173, 196, 215, 235, 253, 271, 292, 310, 325, 346, 364, 384, 402, 418, 434, 451, 472, 490; doings of last, 12, 30, 53, 72, 94, 114, 134, 159, 180, 197, 215, 236, 254, 272, 293, 311, 326, 374, 364, 385, 402, 419, 435, 451, 473, 491
Wharfedale Poultry Show, 361
Wheelbarrows, 224

Wigton Poultry Show, 296

Williams's Holloway Nurseries, 318
Willow planting, 355
"Wiltshire Rector" 158; and Fan-tail Pigeons, 204
"Window Gardening, Hints on," 192
Window gardening for the working classes, 270
Winter-flowering plants, 127, 176, 188
Wintering, bedding plants, 9; plants without artificial heat, 195; plants in a room, 468
Wireworms, 417, 430
Woodbridge Poultry Exhibition, 406
Woodlice, to destroy, 97; frogs destroyers of, 270; killing, 430
Worms, expelling, 475
Wulfenia carinthiaca, 55

YEAR, THE NEW, 1; THE DEPARTED 15
Yew—hedges, cutting down, 379, 386; poisonous to ducks, 389
Yews, planting, 295
Yorkshire gala, 485

ZINC LABELS AND INK, 163, 471
Zinnia elegans, sowing, 449

WOODCUTS.

	PAGE.
Acer circinnatum, leaf.....	132
" eriocarpon, leaf.....	132
" monspessulanum, leaf.....	133
Auricula Frame.....	92
Axe, proper form of.....	252, 253
Bee-hive with entrance at top.....	352
Bollers, portable.....	269
Earth Closet.....	308
Egg-jar.....	17
Fig, Castle Kennedy.....	449
Flower-box, Hayman's.....	266
Flower-garden Plans.....	214, 232, 342, 362
Fruit-tree Training in Van Geert's Nursery.....	356
Glass in Fowl's Glizzard.....	70
Glazing without Putty.....	194
Hen Coops, Ornamental.....	121, 165
Kitchen-garden Plan.....	432
Melon Training.....	28
Palms as Room Plants.....	343
Pavia, leaves.....	174, 175
Paxton, Sir Joseph.....	448
Peach, Wood Shoot.....	324
" Fruit Shoot.....	324

	PAGE.
Peach, Mixed Shoot.....	325
" Gross Shoot.....	325
" Cluster Shoot or Spur.....	380
" Fruit Spur after bearing.....	380
" Fruit Spray.....	380
" Barren Spray.....	380
" Montreuil Fan Training.....	416
" Espalier Carré Training.....	417
Pine Stove, construction.....	288, 239, 300, 381
Pit for Wintering Plants.....	195
Poultry, Roosting-place for Chickens.....	16
" Egg-jar.....	17
" Hatching Room.....	39
" Portable Artificial Hen.....	39, 57
" Artificial Rearing House.....	40
" Artificial Hatching Room.....	56
" Feeding and Drinking Saucers for Young Chickens.....	56
" Improved Fattening Pen.....	77
" Vermin Pit.....	99
" Plan of Breeding Establishment.....	119
Sashes, mode of opening and Shutting.....	401
Strawberry Forcing Houses.....	154, 155
Trenching.....	6

WEEKLY CALENDAR.

Day of M th Week.	Day of Week.	JANUARY 3—9, 1865.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
3	Tr	Jethro Tull died, 1740.	43.4	31.1	37.1	19	m. h. 8 48	m. h. 2 44	m. h. 45 10	m. h. 39 11	6	m. 4 56	3
4	W	Boxwood flowers.	42.6	31.5	37.0	17	8 48	3 4	45 11	morn.	7	5 23	4
5	Th	China Rose flowers.	41.8	30.4	36.1	14	8 48	4 4	42 11	55 0	8	5 50	5
6	F	EPHRAIM, 13th Day.	41.5	29.5	35.0	14	7 8	5 4	after.	11 2	9	6 16	6
7	S	Black Hellebore flowers.	41.6	29.0	35.3	15	7 8	6 4	49 0	23 3	10	6 42	7
8	Son	1 SUNDAY AFTER EPHRAIM.	40.9	30.1	35.5	11	7 8	8 4	33 1	30 4	11	7 8	8
9	M	Primrose flowers.	41.2	31.1	36.1	14	6 8	9 4	24 2	30 5	12	7 32	9

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 41.9°, and its night temperature 30.4°. The greatest heat was 54° on the 5th, 1844; and the lowest cold, 6°, on the 9th, 1841. The greatest fall of rain was 0.86 inch.

THE NEW YEAR.



AIN at last, and plenty of it too. The snow which fell a few days since, making one feel that pictorial representations of Christmas are not always myths, is altogether gone: one night's heavy rain has caused it to descend into the earth, and not a trace remains behind. The white landscape on which I looked but yesterday is wholly gone. Rain! rain! how it pours!

Just been to see old Widow Green, and took her some tea. How these little Christmas-boxes to the poor warm their hearts! Reader, are you in arrears with your Christmas-boxes? Go out this minute and distribute them until your conscience is clear. Never delay them—they have been looked forward to—talked over—reckoned on. If in money, it has been in idea appropriated to such and such an object—perhaps a red comforter a-piece for the boys.

Began my barrelled oysters last night, sent to me each year by dear old Mr. Dash. N.B.—He has all his life been fond of his garden, perhaps that accounts for his kindness of heart. N.B. No. 2.—Barrel heavy, but the oysters sat light; inference, they are good for digestion. N.B. No. 3.—Last autumn heard a respectably dressed man, a clerk in an office, call Asters "Chinese Oysters." He must have been, like the barrel, heavy.

Dear me! I have wandered in a maze and almost lost myself. I am quite amazed. Oh! the rain. Trudging, as I have been, on the slippery roads (Wiltshire roads bad, oh for Berkshire gravel!) a mile is a mile and a half now, because at each step you slip back half the way. I don't like walking in the rain. There is one's alpaca umbrella—the silk one I keep to lend to my lady friends. Silk is soft, suited to "velveted hands." (By the way, editors seem to like pats from velveted hands.) I lost two silk umbrellas so lent; but I still lend on in full faith, for the angels only steal hearts. The rain comes through the alpaca in a fine dust-like drizzle; it spoils one's hat, and gets upon one's spectacles. I remember seeing a fat bishop of the old school—a Banting of a bishop—in great trouble. The good man was consecrating a church one hot day in July. The building was small, the congregation large. The poor bishop perspired profusely. The drops fell from his forehead upon his spectacles. He wiped them. Again descended the hot drops. And so he wiped and perspired, perspired and wiped in a frantic state, until, as he could not see, his chaplain had to read for him. My case

was not so bad; but oh, the rain—how it finds out one's knees!

Home again—home again! What a blessing to have a home! Now never, good reader, especially if you read this in a gardener's cottage, never grow discontented and in a silly fit give up a settled comfortable home, though you may not have quite all you wish. Think if no situation turned up when you had to turn out, small lodgings, no room for the children to play, two removals, furniture broken, and other losses. Now take it kindly—I mean well. "Never give up a certainty except for a better certainty."

Oh this rain! But as out-door exercise is at an end for one day at least, I will anticipate the evening, though it be but afternoon yet, and in slippers ease enjoy myself. There, Gertrude darling, fairy-like child with the dancing curls, hand to me "Chambers' Book of Days."

Just easy, just happily settled, when the door opens, and I hear, "My dear, have you not forgotten to write something for the Journal on the new year?" Last year's was not very ———."

"Please, Materfamilias, do not be hypercritical, though better that than hypocritical, certainly."

"Well, you know I never flatter; but I think (of course what you call the humour was nothing) if you can do good and make people kindly that is very well; besides, some will be on the look-out."

"Well, I will try."

"There! the rain's over. What a glare of sunshine!"

(I do not like writing in a room facing the south.) "There, please draw the blind down one pane, and I shall have one pain less."

I would, dear Editors and brother writers, that we could all dine together once a year—at Christmas, for instance. I, the chaplain, would say grace. What glorious bouquets would be on the table—somebody would bring one for me, I flatter myself. Then the dinner should be *apropos*. Vegetable soup—no fish (except from Putteridge Bury). Then what turkeys! what poultry! what game! what vegetables! what a sweet course! gardeners and poultry-lovers doing their best. Then what Celery, and cheese made from cows that do not milk themselves. N.B., I would find bacon. Then what a dessert! There our pomologists would shine. What Apples, Pears, Grapes, &c.! Then the toasts and speeches! What a cheery evening it would be—what speeches! (I am thinking over my own at this time—three anecdotes in it). What talk, pleasant, clever, spirited! not a Gooseberry fool among the whole company. Then there would be the lady writers too—Forn-loving, and flower-loving and poultry-loving fair ones. Would not the wit be, like the flowers, brilliant and harmless?

Well, well, it is no use wishing; I must write instead of speak, though I prefer literally saying my say. Here begins: Brothers of the pen, Editors, and all! When I look through the Numbers of 1864 I am bold to say they are as good, or better, than their predecessors. Sometimes the gardening part may be the best, at other

times the poultry part. That reminds me of a true story. A mamma and her young daughter sat down to play a duet at a party. They did not keep good time. A horsey young lady was present, who also had a correct ear for music; she was heard in a subdued tone to say to herself, "Ah! now the old mare's first—no, now the filly's first—ten to one on the filly—no, five to one—no, well done, they are both in level after all—capital, a dead heat." So of our Journal: a capital year, dead heat at the end.

On looking back through the past year, let me say a word about the ladies who have figured in our pages, made a better figure of themselves with their steel pens than their steel hoops, if I may be judge. First, thanks, personal thanks, to "FELIX-FEMINA." Never more will I say that I do not love Ferns, alleging that form without colour is unsatisfactory. "FELIX-FEMINA" has taught me better; whenever she writes she makes me a "Felix-mas." Oh, the pretty, graceful, fernlike sentences dancing like fronds in breeze and sunshine. She gives us an example how to make practical matters pleasing, giving details, but which cannot be called dry. Then her descriptions, too! One only fault she has—she makes me throw down the pen, dispirited, almost hopeless.

Nor have ladies alone excelled the gentlemen with quills, but with feathers too. Witness Lady Holmesdale and Miss Emily Beldon. I am no exhibitor, but could I be a Lady Holmesdale or an Emily Beldon all at once I would be. As a stalwart young Irishman, begging of me, said in reply to my question, "Why don't you enlist, a fine young fellow like you?" "So I would, if they'd make me a jeneral at once, your riverence." And I would be an exhibitor if I could be a Lady Holmesdale or an Emily Beldon at once. But, ladies, you make me despair. You have won your laurels, ladies, may you wear them long, adding each year fresh ones to your present full chaplets.

Looking back, and true to my character as chaplain (I was duly appointed by our co-archbishops at 171, Fleet Street)—looking back through the Numbers of the present year, I must say that any little disputes have been carried on in a nice spirit; no hard words, sneers, or innuendos. My flock, I am proud of you. Sometimes I have seen in periodicals of former days disputes carried on in an acrimonious spirit, which have reminded me of an old story, the last it must be, of the days of my youth. An old doctor, long since dead, had a man servant named Solomon, wise in all things save where the beer was concerned. The doctor was at home alone, so he deemed, one Sunday afternoon. Presently he heard a singular noise as of a muffled voice and a running of some liquid. He traced the sound to the cellar, where he found foolish Solomon on his back, under a tap, quite drunk, with the beer still running on his face, and he solemnly saying, "No more, thank you sir; quite enough, thank you sir." Now, so should I say if a controversy became too lengthened, but I have not had to say so this year; but I should have said, "No more thank you," had there been a good reason, for my motto is, "Peace and good will to all," and among all.

And now, lastly, dear readers. Have we not done you good this last year? Gardeners in your cottages, for you shall be first addressed, as right you should, have you not looked forward to the day you receive our Journal? Have you not one foot, perhaps, rocking the cradle—

"Where alone with God the baby lies."

or nursing the said baby, a thing never to be ashamed of, for a baby is the best nursery plant I know—and you think so too—have you not read bits aloud to your wife, man, the good creature loving gardening for your sake, and you helping her with the little ones of an evening as you should, allowing her to ply her needle unencumbered for your benefit? Have you not had many a treat from our pages, taken, perhaps, a garden-plan, for which you had bright looks and praise, from your lady employers especially?

And you, younger ones, younger and more aspiring, have you not by studying our pages been fitting yourselves for higher positions? Be steady, good fellows, work on, read on, and—Now you won't mind the hint, will you?—"Do as little as possible on a Sunday."

Country gentlemen, ladies, clergymen, amateurs all of you, forgetting that nice boy who keeps fancy pigeons and

rabbits, and got a prize at — Show,—I hope you have all felt drawn towards us this year, and that you welcome our Journal as a friend. We all need a hobby, it makes life going again to us. A man with a hobby has

"A young lamb's heart amid the full-grown flocks."

It drives away care and balances the mind; and what hobby is half so charming as flowers and birds? Good wishes to you all—a happy new year to you. I wish I could shake hands with you all; to "velveted hands," and horny hands too, I could give an equally warm grasp. But it cannot be—it cannot. I know you not by sight, I wish I did; so with my pen I must say farewell.—WILTSHIRE RECTOR.

FLOWERS OF THE PAST SEASON.

BEDDING PELARGONIUMS.

FOR a dry season such as we have had during the past summer, what can for a moment compare with the various sorts of Zonale or bedding Geraniums? While Verbenas mildewed and died off, Calceolarias would not grow, and Petunias were lanky and poor, the Scarlet Geranium as it is still called (although now to be had in white, pink, crimson, and other colours), kept its ground, and, if not growing quite so vigorously as in ordinary seasons, certainly bloomed as well. It is no wonder, then, that the caterers for public taste should endeavour to meet the increasing demand by increasing attention to their hybridisation; and hence it is that we may truly say the name of them now is legion. But there are some mistakes made on this point which I would remind our friends of. It is not enough that a new variety have a larger or more brilliant flower than others in the same class, if it have not a habit correspondingly good. I have flowered some remarkably fine-looking sorts this season; but then their habit was so gross, and the trusses so sparingly produced, that they were utterly valueless. Again: where there is no peculiar marking to make a distinction between sorts, a flower may be very good, but so strikingly similar to others already in cultivation as to puzzle any one to decide as to the difference. Thus, I have had several this year so like Herald of Spring, that although individually good, they are not worthy of being retained where the older, cheaper, and equally good variety is to be had. Nor let it be forgotten that some sorts, although of very little use for the parterre, are very valuable for the greenhouse; and growers would do well, I think, in announcing their novelties, to say for which they are suitable. There are many which are equally good for both purposes, while some are only fit for one. It is utterly impossible that even in the most extensive gardens all these varieties can be grown, and therefore a weeding process must be adopted. No flower is, perhaps, more widely cultivated than this—in the wilds of dear and stormy Donegal, and in the brilliant masterpieces of gardening at Linton or Shrubland, it is alike cherished. Let us not lose anything of our enjoyment by being distracted by the crowd of new faces, when we have many times to say the old are better.

VARIEGATED-FOLIAGED VARIETIES.

Several of these have come under my notice this season, but in the beautiful section where Mrs. Pollock has reigned supreme I have not seen as yet any that surpass that exquisite variety; and I think that whatever slight difference of marking there may be in some of those I have seen, such as Mrs. Benyon, yet for habit and other qualities combined Mrs. Pollock still stands unrivalled. In the Tricolor Silver Variegated varieties a good and beautiful addition has been made in Italia Unita, sent out by Messrs. E. G. Henderson and Son. This class make excellent pot plants, but, unlike the Golden Variegated, they do not prosper well out of doors.

WHITE-FLOWERED VARIETIES.

We all recollect what a terrible warfare (on paper) there was about the new varieties of white-flowered Pelargoniums that were to come out last spring; "a very pretty quarrel" indeed, but one that might have been very well spared. My own opinion of them all may be illustrated by the reply made to me by a well-known grower. "Well, Mr. —, what do you think of these new white Geraniums?" "Think!—why, that I could execute any amount of orders for them

from my stock of Madame Vaucher." Madame Barillet, the French variety that I saw, is perhaps a little more free-flowering, but that is all. For bedding purposes these flowers are of very little use. Rain soon soils their purity, while the sun turns them of a dirty blush. As pot plants they are very valuable, and they do excellently for cutting for bouquets.

SCARLETS OF VARIOUS SHADES, PINKS, &c.

**Glitter (Bull).*—A good scarlet, bright flower. Very brilliant, and likely to prove useful.

**Excellent (F. & A. Smith).*—A very free-flowering variety; strong horseshoe; light scarlet rose flower, well-formed; of good habit.

Nonsuch (Bull).—Rose; horseshoe leaf, but the flower and truss too small.

Elegance (Bull).—Violet rose. Pretty, but too much like Herald of Spring.

Blushing Beauty (Bull).—In the style of Prince of Hesse, and no better. Good horseshoe foliage.

**Lorenzo (Bull).*—Very large pip and truss, scarlet; good and well-marked foliage. An excellent variety.

Loyalty (Bull).—Vivid scarlet, but too gross in habit to be worth anything.

**Miriam (Bull).*—A very pretty rose-coloured flower; habit of plant vigorous; free-flowering, colour novel.

Purity (Bull).—White-flowered. No better than Madame Vaucher.

Regalis (Bull).—Salmon rose. Something in the way of Herald of Spring.

Vivid (Bull).—A very bright scarlet, large truss and pip; but I fear the habit is too gross ever to make it valuable.

**Eve (Bull).*—Pretty, pink shaded with white, and very promising. It has received a first-class certificate.

Celestial (Bull).—Too gross, and not free-flowering.

Striking (Bull).—Like Diadem and Madame Rudersdorff, but not equal to those varieties.

Brilliance (Bull).—Too gross in habit to be of any value.

Provost (Bull).—Too much like Herald of Spring.

**The Clipper (Bull).*—An excellent flower, and one well worth growing. Its habit is good, and the flowers large and round. Colour bright scarlet.

Effe (Bull).—Truss too small.

**Chasmer (Bull).*—A flower somewhat in the style of Eve, and, like it, will be useful. It is, perhaps, somewhat more robust than that variety.

**Lord of the Isles (G. Smith).*—Crimson scarlet; large and well-formed. Of good habit.

Orange Globe.—Orange scarlet, white eye. Good habit.

**Eugénie Mèard.*—Bright salmon, shaded and spotted with white. Very pretty.

**Culford Rose.*—Brilliant carmine salmon; flowers large, well formed. A good trusser.

Louis Schweitzer.—Salmon-coloured flowers, white centre; truss good.

**Lady Cowper (Francis).*—A perfect little gem, and quite distinct from anything I have seen. It does not grow above 7 or 8 inches high, is very free-flowering, the flowers bright scarlet, and as an edging for scarlet beds invaluable. Its leaf is so small and fine that it hardly looks like a Geranium.

**Loyalty (Williams).*—A bright scarlet flower. Habit of plant good.

There can be, I think, little doubt that in some of the foregoing varieties we have advances on anything previously out. There is a size and form amongst many of the Scarlets, combined as these qualities are in some of them, with good habit, that will not fail to recommend them for general use. Such flowers as Excellent, The Clipper, Lorenzo, &c., will, I am assured, be general favourites. The season not having been a favourable one for determining the merits of any bedding plants will justify one in not deciding positively against a flower; but I am inclined to think that those marked with an asterisk will be found the best in each class. In this as in every other department of horticulture there is progress; while at the same time there are many things sent out which only the partiality of the raisers can see any beauty in beyond those already in cultivation.

While on the subject of Scarlet Geraniums I cannot forbear saying another word about the plants that appeared at our metropolitan exhibitions this season. They were quite, to

my mind, unworthy of the well-known skill of our growers. Anything more frightful than some of them were, it is impossible to conceive. In some the trusses were tied right across, so that stakes and stalks met the eye in every direction. Other plants were trained table fashion, as plants of Pompon Chrysanthemums sometimes are; and in very few was there that appearance of neatness and symmetry, which it is very easy to give to a Scarlet Geranium. If there be any competition this season, let us hope to see more natural plants.—D., Deal.

FRUIT IN THE NEW YORK (AMERICA) MARKET.

NEW YORK is abundantly supplied with a profusion of various sorts of fresh fruits nearly all the year round, and from the number and quality of indigenous varieties, as well as proximity to the West Indies and other regions favourable to pomological development, she enjoys advantages in this respect over most of the European cities. Amongst the earlier arrivals come shiploads of Bananas and Pine Apples. The Bananas are very fine, and are imported all hanging in huge clusters, just as they come from the parent tree. They are retailed as cheap as two cents, a single fruit, finer ones, of course, dearer in proportion to quality, and are extensively used during the prevalence of the hot weather, when large quantities of ripe fruit can be consumed without detriment to the system. Amongst Pine Apples I noticed chiefly the Black Jamaica and Montserrat, with a good sprinkling of Smooth Cayennes and a few Providences. They are sold from 5 cents, upwards, very fine fruit to be had for a quarter of a dollar, equivalent to an English shilling.

Strawberries come in about the end of May, and beginning of June, and for three weeks or a month reign supreme, to the exclusion of almost all other fruits, and owing to the extreme heat then prevailing, the Strawberry season only lasts for that period. The same cause also detracts materially from the flavour of the Strawberry, the very rapid maturing process undergone, operating, at least, against the juices of this fruit being highly perfected; but as they are seldom eaten singly, and never sent to table as gathered, any deficiency of flavour is not easily detected when "smothered in crame." Strawberry-growing for market has been gone into most spiritedly, the principal grower in the States, Mr. Knox, of Pittsburgh, Pennsylvania, rejoicing in the regal title of the "Strawberry King," and long may royalty be thus honoured. Many varieties, such as Keens' Seedling, British Queen, and Sir Harry, do not thrive well; but again some others, such as Triomphe de Gand, Victoria, La Constante, &c., seem to have a more adaptable constitution, and bear abundantly. The favourite market variety, and the most prolific bearer I ever saw, is a seedling raised in this country, called Wilson's Albany. It is a little acid, unless when dead ripe, but a valuable Strawberry for preserves. Triomphe de Gand has risen rapidly in favour, and bids fair to be a standard fruit.

Small fruits, such as Currants, Raspberries, Cranberries, Whortleberries, Blackberries, &c., are supplied in immense quantities, the Blackberry being a great favourite, and deservedly so. One variety, the Lawton, is cultivated extensively and profitably; it is a large fruit, a free bearer, and answers admirably for either dessert or preserves. Made into what is termed Blackberry brandy, it is highly prized as an antidote to many disorders incidental to a hot climate, and I heard one energetic, demonstrative lady tell how this summer, instead of idling away her time at a fashionable watering-place, she took up her quarters in what is termed the Blackberry country, in New Jersey, made seventy-two gallons of Blackberry brandy with her own hands, and forwarded it direct to the armies in the field, where she trusted it would be the means of alleviating some suffering—a most notable instance of how far active benevolence transcends passive sympathy. Cranberries are cultivated extensively, and are highly prized by housekeepers for pies, puddings, preserves, &c., one company having a patch of 25,000 acres in one location in New Jersey, for their production, and having lately taken in another 10,000 acres for the same purpose. Mr. Tillyard used to exhibit good dishes of the American Cranberry at the various London shows,

and they formed valuable auxiliaries to his collection of fruit; but they do not seem to have been grown to any great extent.

The market has been fairly flooded this season with Peaches; for several weeks a daily supply of from 40 to 45,000 baskets was calculated to have reached this city, each basket containing nearly a bushel. They come principally from the States of Delaware and New Jersey, having as a rule most doggedly refused to ripen around New York for some years past. The Peach is grown in orchards just as you will find the Apple growing in the Carse of Gowrie, or Devonshire, but the fruit generally averages small, and lacks the luscious richness of the cultivated varieties grown out of doors, from Sutherlandshire to the Isle of Wight. This deficiency of flavour is the natural result of the quantity grown, as the same attention cannot be paid as at home, where every individual fruit receives especial care, no superfluous foliage being allowed to shade it from the sun, or noxious insects prey on its vitals.

Nectarines are not known except to professionals, and the few Apricots that I have seen were poor. Plums are very fine, and reach market in large quantities. I noticed some old acquaintances amongst them, such as Green Gage, Damson, Jefferson, &c. Both Musk and Water Melons are supplied in immense quantities, and a fine sight during the prevalence of the hot weather it is to see this deliciously grateful fruit piled up on the stalls in thousands, a supply of Water Melon being kept cut up ready to quench the thirst of hurried passers-by, for the small sum of 5 cents. The Musk Melons are retailed from 10 cents a-piece, and were even finer and more plentiful this season than ever.

Grapes, both native and exotic, are first-class. The fruiterers have the exotic varieties nearly all the year round, comprising those which are so well known to the horticultural public, and as their cultivation is in the hands of professional gardeners, this is sufficient guarantee of their excellence, and could distance be annihilated, many of the London exhibitors would have to look out for their honours. Having been free from mildew, that scourge of Grape-growing districts, the native Grapes were even finer this season than usual. The principal varieties at market were—Concord, Hartford Prolific, Delaware, Diana, Rebecca, and Catawba, the Isabella being now nearly superseded. The Catawba is principally cultivated for its wine-producing qualities. I should think most of these varieties would do well in the south of England, where the Sweetwater ripens so well, and often when admiring the fine bold outline of the terraces at Fonthill from the opposite slope, I have thought what a fine vineyard might be made along their front, where Mr. Beckford shaped beauty out of barrenness, and the present proprietor, the Marquis of Westminster, has done so much to renovate the place, and improve the condition of his workmen.

Pears are now quite an American institution, most of the fine varieties growing freely as standards, there being no such thing as garden walls for fruit trees here, for gardeners to show their skill and waste their time, in training trees in all manner of impossible ways, a simple picket fence generally doing duty as an inclosure. Neither Jargonelle, Marie Louise, or Easter Beurré, do much good, but they are almost the only exceptions I know. Williams's Bon Chrétien, under the popular name of Bartlett, is the great market fruit, and I have seen the trees literally loaded to the ground with large, finely developed fruit, and as an instance of the prolific properties of the Pear here, I have seen fine fruit of Duchesse d'Angoulême selling for a cent. a-piece; but this is by no means a common occurrence. The following are to be found in every collection of Pears deserving the name, and are all reliable varieties in this climate—viz., Doyenné d'Été, Kingessing, Beurré Clairgeau, Beurré Diel, Beurré d'Anjou, Seckel, Beurré Gris d'Hiver Nouveau, Belle Lucrative or Fondante d'Automne, Doyenné Boussoch, Doyenné Sioule, Virgalieu, Flemish Beauty, Louise Bonne of Jersey, Onondaga, Urbaniste, Glou Morceau, &c. As a rule most of these varieties thrive much better on the Pear than on the Quince stock.

The Apple also comes in for its share of public patronage, and well does the famous Newtown or Fall Pippin deserve its name as it makes both a first-rate dessert and good cooking apple. The Baldwin, Spitzenburgh, Astrachan, and

a few others, make their annual appearance in the market, but all fall immeasurably short, in point of merit, of the Newtown Pippin, as no housekeeper will use any other while she can get this, a very sure test of the general utility of any variety of fruit.—DAVID FOULIS, *New York, December 12th.*

THE SOMERFORD VINERIES—DISTANCE BETWEEN VINES.

IN Mr. Q. Read's report on the Somerford vineries in your Journal of the 6th ult., it is stated that the back walls are planted with different Vines, and that these bore fruit nearly down to the ground.

Presuming the houses to be of the lean-to form of the ordinary dimensions, about 15 feet wide, and about as much high, the canes on front rafters being planted as usual and trained on the spur system, my question is, Whether the Vines on the back wall will have light and sun enough, so as to be still fruited downwards, when the front Vines are full grown?

I am an amateur fruit-grower, principally of Vines, and am just about erecting two other lean-to vineries. In my former houses I made use of the back wall by training some Vines almost up to the top, and then dividing them into two horizontal branches, as in the Montreuil mode of training. In this way the Vine catches the top light and thrives very well, but a great part of the lower wall is entirely without fruit. For this reason the Somerford-way is to be preferred if the lower parts of the stem really receive light enough for fruiting well. Then I have another question to ask. I find the distance at which it is generally recommended to plant Vines in a Vine-border is 2½ or 3 feet; I never planted them nearer to each other than 4 feet, and even with this distance the laterals, although on the proper spur system, almost meet. Now, with closer planting they must partly cross each other, even with close pinching-in. I should, therefore, like to know whether 3 feet is really the distance generally adopted in England?

Allow me, before concluding, to remark on a notice in your paper the other day regarding the Black Hamburg grafted on the Chasselas Musqué. I practised this five years ago with very fair success. The growth is rather strong on this stock; the bunches and berries are large, but lighter-coloured than those of another Vine on its own roots; the skin of the berries, however, is more tender, the flesh very sugary, but of rather less flavour.—JOHN W., *Hamburg, Germany.*

[In reply to your German correspondent's very reasonable question, I wish to say that the vineries at Somerford Park are not ordinary lean-to's, but what may be termed nearly half span-roofed. The inside dimensions of the houses are as follows:—Width, 15 feet; height of back wall, 10 feet 3 inches; front to the underside of the rafter, 4 feet 6 inches; height to the ridge, 12 feet; with a north light 4 feet 3 inches in length. The Vines in front are 4 feet apart, and are planted on the inside, but provision is made for the roots to go outside when the inside border becomes somewhat exhausted, the front wall being arched for that purpose. The Vines at the back wall are planted 5 feet apart, and two rods are taken from each Vine, thus making the rods 2 feet 6 inches asunder, and at the time of my visit the lowest bunches on these Vines were 2 feet 6 inches from the ground.

Now, I consider there is a very considerable advantage in a house of this description over an ordinary lean-to for planting Vines at the back, as 4 feet of rafter and 4 or 6 feet of the back wall can be relied on to produce good Grapes after the Vines have reached the top and become established. It is not to be expected that the Vines will continue to produce good fruit so near the ground as they have done this year, but about one-half of the back wall may be depended on as being productive.

I do not wonder at your correspondent's back wall in his ordinary lean-to vinery being unproductive, but I should expect his branches trained horizontally near the top, not only to grow well, but also to bear plenty of fruit, provided the Vines are in a healthy condition.

With regard to the distance Vines are planted apart, it is now becoming almost general in England to plant much closer than formerly, and there is no objection to their being

3 or 2½ feet apart. I planted a small vinery about a fortnight ago. (In the following compost:—to every five or six barrowful of turf from an old pasture, I add one barrowful of old mortar rubbish, to that nearly one barrowful of ground oyster shells, and to the above another barrowful of ground bones and woollen waste, the latter procured from a woollen manufactory.) I have planted them 2 feet from plant to plant, that is one to go up the rafter and one up the centre of each light. In order not to be overcrowded with branches we shall disbud freely, and regulate the spurs at the winter pruning, and where we should have two spurs on rods 4 feet apart, we only require one when only half that distance. If you expect to take a given quantity of fruit from each light of a vinery, it is much better to take it from two vines than one, you have double the quantity of roots to produce the same weight of fruit, and consequently the vines do not so soon become exhausted.—Q. READ.]

POINSETTIA PULCHERRIMA CULTURE.

PROBABLY no plant in cultivation is more ornamental during the winter months than *Poinsettia pulcherrima*—that is, when it is well grown. Even under indifferent culture it is ornamental from the brilliant colour of the terminal bracts. It is also one of the most accommodating of plants, as scarcely any amount of ill-treatment or neglect, with the exception of an unsuitable temperature, will destroy it or prevent its blooming in its proper season. It will bloom freely as a large plant, or as a very small one, thus accommodating itself to a large conservatory or shallow pit.

No one who is desirous of having a really ornamental plant, and can command a winter temperature of from 50° to 70°, need despair of cultivating this *Poinsettia*. During the summer a rather close greenhouse is all that is required to start and keep it growing; but to give my own experience of its culture in a connected form I will begin at the beginning.

In order to have a large plant of it, take a plant that has flowered, keep it rather dry, in a temperature of about 50°, until April or the beginning of May, and when in a temperature of 60° it will most likely begin to start into growth. It may have been previously cut down to within about 8 or 9 inches of the collar, or it may be cut according to the manner in which it breaks, so as to leave three, four, or more shoots. When it has made two or three leaves turn it out of the pot, pull off some of the old roots, and shaking out some of the old soil, put it in a pot a size larger than it was before, using a mixture of equal parts of peat and loam, with sufficient sand to make the soil porous. Place the plant in a stove or hotbed, and it will soon take to the new soil, and show roots through the bottom. When this is the case it may be shifted into a 12 or 13-inch pot, in which it may be allowed to flower, unless it is desired to have a very large specimen, when it may have a third shift about the end of July into an 18-inch pot, using the same kind of soil, and bearing in mind that a slightly increased temperature is advantageous after each potting. When, however, it has taken good hold of the soil after the last shift, a vinery or rather close greenhouse will suit it very well until the middle of September, when it should have a temperature never under 50°, and an average of 60° would suit it much better. It may then have an occasional dose of liquid manure, say twice a week. I forgot to state that the points of the shoots may be stopped about the time of the second shift; this will cause two or three shoots to be thrown out from each. From the end of July it will grow rapidly until it begins to show the scarlet bracts, which will be about the beginning of November, and at Christmas it will be in its prime. It may be permitted to bloom as long as it will, and may then be gradually allowed to become dry, and rest, taking care, however, that it is not overdried. When the time arrives for starting it again it may receive the same treatment as before. It is better to take a smaller plant to make a large specimen the next season than to take the same plant, which would have to be reduced nearly to its original size, or treated after the manner of a specimen *Geranium*.

Many prefer having plants in small pots with a single head of bloom on each; and where there is no convenience for growing large plants this is the best way. Under any

circumstances such plants are useful for decoration, and make capital plants for the dinner-table.

In order to obtain them one or more old plants are necessary to cut from in May, when they have had their rest, and been started into growth. The shoots being 3 or 4 inches long, are taken off, and placed in small pots in an equal mixture of peat, loam, and sand, and plunged in a brisk bottom heat. When struck they may be potted in four-inch pots, and shifted from them to six or seven-inch pots. They will not branch, but the freer their growth the larger will be the head of bloom on each. They may be had still smaller by starving the old plants until later in the season, and taking off the shoots in July, potting them singly into thumb pots, and when rooted shifting into four-inch pots, in which they will bloom. The plants will be small, and the flower in proportion; but they will be as ornamental and effective for decoration as can well be conceived. I have known them so grown in large quantities for Covent Garden Market, and a prettier sight than such large masses could not well be imagined; in fact, *Poinsettia pulcherrima* is a plant that will always reward the cultivator, whether grown simply for decorative purposes or for profit.—F. CHITTY.

MANAGEMENT OF ROSES IN THE NORTH.

I HAVE read with much pleasure Mr. Radclyffe's letter, in page 468, and beg to thank him for the advice it contains. I find that I have now most of the varieties recommended, including those mentioned in a subsequent paragraph. I have also many others, and hope to be able, next season, if all go well, to add a few to the list with which he has favoured us. In the meantime I think the following, which are not included, will not disappoint growers in the north, at least, so far as the opening of their flowers is concerned—viz.:—Catherine Guillot, Madame Vidot, Duchesse de Cambacères, Lord Raglan, Buffon, Empereur de Maroc, Cardinal Patrizzi, Safrano (T.), and Comtesse Murinais (Moss).

As regards the particular merits of the above, I must allow amateurs to judge for themselves; but I may be permitted to observe, that where such Roses as Madame Vidot, Catherine Guillot, and Lord Raglan can be grown successfully, they should never be omitted, however small the collection may be. Nothing in the form of a Rose could surpass the first of these as it bloomed with me this last season. I know that in some instances it has failed to give satisfaction, but while I can obtain a single bloom, such as it produced here, I will endeavour to find a place for it. The other two I saw in flower at a place about thirty miles to the west of this, at an elevation of nearly 700 feet above Loch Ness, and of which it may almost be said that, when it ceases to rain it commences to snow; there cannot, therefore, be any doubt as to their being suitable to the wants of northern growers.

I now beg to refer to the concluding paragraph of Mr. Radclyffe's letter, and I trust he will pardon me in pointing out a slight mistake which he appears to have made. He says—"Celina is only fit to bud upon." (Probably meaning at the time the H.B. Celini). By referring to page 436, he will find that the variety I make mention of is the Moss Rose "Celina," which I do not for a moment suppose he would recommend for such a purpose. I was glad to find that I had treated Auguste Mie and Victoria in accordance with his directions, which I trust may have the desired effect.

I will now with your permission, reply to the observations of "A SUBSCRIBER, Aberdeen," and endeavour to supply the information requested, but in the first place I beg to state, in reference to the cultivation of the Rose, that although certain fixed rules are laid down for our guidance, it does not follow that the same treatment will answer equally well in all situations. Where there is pure air, deep loamy soil, and good drainage, it is pretty plain sailing, but in the absence of these essentials, it becomes necessary for us to exercise a little of our own judgment, and it is astonishing sometimes what a person can accomplish when guided by a little common sense. I would remind my brother amateurs, that it is not where everything goes on smoothly with us that we learn most. No, the little difficulties we frequently meet with are oftentimes our best instructors. As an instance of this, I beg to refer them to the letter of "ALIQUI," at

page 411, from which we may all take a lesson; but I find I am digressing, I will, therefore, proceed at once to answer "A SUBSCRIBER'S" inquiries. In the first place, then, he will observe in the third paragraph, page 436, that I give the preference to the Manetti stock budded and planted deeply—that is, with the junction of the bud with the stock 2 inches or so under the surface. In the second place, the only additional information I can give respecting the Rose is, that it is generally known here under the name of the "Maiden's Blush." Should he not be able to find it under that name, I have no doubt the description I have already given of it will lead to its discovery in one or other of the cottage gardens in his neighbourhood. I may, however, inform him, that I intend using this as a stock cautiously—hasty conclusions are dangerous sometimes—it is all that I have said of it, but I have since observed that the stem does not increase in size in proportion to the head; consequently, the bark may in time become indurated, and we may, in a year or two, find the heads beginning to assume a sickly appearance, and ultimately dying off altogether. If, however, it should turn out all right in this respect, I am still of opinion it will beat the Briar.

I will now describe the manner in which I treat my Roses generally, and leave "A SUBSCRIBER" to judge for himself as to whether such treatment may be suitable to his circumstances. First, then, I must tell him that nearly all my dwarf plants are in two borders by themselves, the second border is a continuation of the one I have before described. I find that they contain just seventy plants, and as many varieties. In other parts of the garden there may be twenty or thirty more, but here let me state, that I do not approve of growing so many varieties in a small collection when not intended for exhibition purposes. A third of the number in my opinion would be quite sufficient, but I am groping my way, and doing it in order to find out what are most suitable to the climate, but to resume. About the beginning of the present month, having received two or three dozen fresh plants, I made a complete re-arrangement of my borders, that done I staked each plant firmly, after which I mulched the whole with pig manure, about 4 inches thick, taking care to keep it an inch or two from the stems of the plants. I then covered the whole with long heather to the depth of about 1½ foot laid on very loosely, which in my opinion is much better than fern for the purpose, as it allows the air to circulate more freely which is of great importance. The whole of the above are either on the Manetti or dwarf stocks of the Dog Rose, although I certainly prefer the former. Some of them do very well indeed on the latter, but it must be borne in mind that deep planting does not suit this description of stock. My practice is to have the crown from 2 to 3 inches under the surface. Of standards I have but few of last year's budding, in consequence of a number of the buds having been destroyed by an insect. They are all under bud this year and looking well, and I hope, after the warning I have received, to carry them through safely. I have each bud protected with a piece of oiled paper (old newspapers brushed over with boiled oil and allowed to get dry), contracted at one end and tied firmly round the shoot above the bud, leaving sufficient room underneath. This does not, like hay or other soft material, retain moisture, which in my opinion is more injurious to dormant buds than frost. All these as well as the dwarfs are firmly staked and mulched, with a little heather placed round their roots as well. The heads of standards, especially the moderate and dwarf-growing varieties, I protect by placing around them and amongst the shoots a few branches of heather, and tying the root ends firmly round the stake, giving them the appearance of so many inverted brooms. So much for protection, now for the removal of it. Well, about the beginning of March if the weather be favourable, I take off one-half of the heath and the remainder about the middle of the month. I then in a few days afterwards remove the manure from the surface to the kitchen garden, that done I prune the whole, trim up the borders, and make all look tidy. I have now nothing to do, with the exception of attending to them as occasion may require with weak guano water, of which I have always a cask at hand, or other liquid manure, but to watch the progress of the plants and admire their beauties when in bloom.

Such is my mode of treatment, and if I am wrong in any

particular, I trust for the sake of others as well as myself, that I may be put right by my valued instructors in THE JOURNAL OF HORTICULTURE.—LOCK NEESE.

P.S.—A hint as to the best way of stopping the insect, to which I have alluded, from committing such havoc among the buds, will oblige.

TRENCHING.

I FIND that ground can be dug thus, at about one-third the expense of digging all the ground, and left in a much better state for the action of frost.



The land also remains dry. You will perceive that only one-third of the ground is removed.—A CONSTANT READER.

[If exposing the soil to frost and other atmospheric influences is all that is required, the above plan is available, but not if the objects are either to deepen the soil, or bring the lower stratum to the surface.—EDS.]

PEARS ON THORN STOCKS.

WITH reference to the communication with this heading in your Number for 27th ult, I may mention that in the garden at Preston Hall, near Dalkeith, in the county of Edinburgh, there is an old Muirfowl's Egg Pear tree grafted on the Hawthorn, now in perfect health, and which bears fruit of excellent quality.

The gardens at Preston Hall were laid out fully three-quarters of a century since by the late Mr. Hay, who was then gardener there, and who afterwards practised in Edinburgh with considerable success as a garden architect, and the tree in question seems to be one of those planted when the garden was formed.

I may mention that I some years since sent a basket of the fruit to a meeting of the Edinburgh Botanical Society, and the members present declared them to be "excellent," as well as "interesting." I have tried a good many Pears on the Hawthorn stock, some of which are now more than ten years old, and all have invariably done well.—WILLIAM GORRIE, Bangholm, Edinburgh.

GARDENERS DURING ILLNESS.

ARE there any rules for paying gardeners during sickness? I mean, is it a gentleman's duty to pay his gardener when he cannot attend work through being sick? I should very much like to know.—E. B.

[We regret that we cannot give any definite reply. The "duty" of a gentleman to pay his gardener when from sickness unable to attend work, must ever remain a question of principle and of feeling, rather than of right and duty. Something will, no doubt, depend upon how a servant is hired—domestic or out-door, and whether he is a yearly weekly or monthly servant. To the credit of our gentry, the most of them, when a servant is ill, will pay for a time, and may also secure medical help. We have known servants accept all this as merely a matter of course, and not as a subject to be grateful for, yet such treatment spontaneously arises from generous and kindly feeling. If there should be any legal right to such payment, that must be much lessened in the case of out-door servants. In their case the only appeal would be to kindness rather than mere duty. Most employers of gardeners treat them kindly on such occasions; but that is different from a gardener setting up any claim to it as a right. We have known cases, but they are few, in which great cruelty was exercised, such as giving a man notice to quit when unable to turn himself in bed; but in most cases much sympathy and kindness are manifested, and this is sure to be an advantage to both in the end. Suppose a thoroughly good gardener to have his wages stopped for a week's illness, though he had served his employer early and late, we know he would resolve to stay with such an employer only as long as it suited him. The very changing of servants, even though the old and the new might conscientiously do their very best, would soon make havoc, from the very change, with more than

would pay the wages of some weeks' or even months' illness. However, in all such cases the servant will act wisely if he seldom thinks, and never speaks, of his own "rights" and his employer's "duties." We have known otherwise clever men reason themselves into strange fancies, until they became morbidly aggrieved and injured. We believe that gardeners, like other workers, must, as a matter of course, be able to work in order to receive the stipulated remuneration, yet very few gentlemen run close in this matter; and of all servants none are more worthy of kind consideration than gardeners.]

ORCHIDS IN FLOWER IN DECEMBER.

THIS short list may prove interesting to some few of the many lovers of Orchids, as we like to know what plants flower at this dull season. I think winter-flowering Orchids are worthy of more notice than is usually bestowed upon them, as they enliven the dull winter months, when there is little of interest to be seen in other departments. It would be useless for me to attempt to describe the many beauties of this beautiful tribe of plants. We have now in flower *Angraecum sesquipedale*, with its ivory white flowers 5 inches across, with a great tail 12 inches long; *A. eburneum superbum*, *Ansellia africana*, *Barkeria Skinneri*, *Burlingtonia amona*, *Cattleya amethystoglossa*, one of the most beautiful *Cattleyas* in cultivation; *Calanthe Veitchii*, a beautiful winter-flowering plant with a spike 4 feet long, thickly set with its beautiful rose-coloured flowers; *C. vestita rubro-oculata*, *C. vestita lutea*, *Celogyne fuscescens*, *C. species*, *Cypripedium hirsutissimum*, very fine, with two flowers on each spike; *C. Fairrieanum*, *C. barbatum nigrum*, *C. insignis*, *C. venustum*, *Epidendrum vitellinum majus*, *E. amabile*, a magnificent variety, one that will become a general favourite when known; *Galeandra Stangeniana*, *Ionopsis paniculata*, *Leptotes bicolor*, *Lælia acuminata*, *L. anceps*, *L. autumnalis*, a beautiful variety; *L. præstans*, *Lycaste Skinneri*, in varieties; *Maxillaria venusta*, this has been in flower six months; *M. picta*, *M. picta majus*, *Miltonia Morelii atro-rubens*, *Odontoglossum Inseleyi*, true; *Oncidium Cavendishii*, *O. Suttonii*, *O. pulvinatum majus*, *O. sphacelatum*, *O. species*, *Phalænopsis amabilis*, *P. grandiflora*, *Saccolabium miniatum*, *S. violacea*, *Sophronites grandiflora*, long and round leaved varieties; *S. cernua*, *S. violacea*, *Phajus maculatus*, *Trichocentron Pinelli*, and *Zygopetalum crinitum*.—E. MITCHELL, Gardener to R. F. Ainsworth, Esq., M.D., Lower Broughton, Manchester.

USES OF COCOA-NUT FIBRE REFUSE.

IN a recent Number of the Journal you made some remarks respecting potting Camellias in cocoa-nut refuse, and have rightly recommended it to be mixed with loam. I think many persons use too much of the refuse for hard-wooded plants, which generally thrive best in good loam with very little peat or leaf mould—no more than is sufficient to keep the soil open and prevent its binding too closely together. The refuse may be substituted for the peat and leaf mould. I planted an old sickly Camellia, that had not flowered for three or four years, in mould mixed with about one-fourth of the refuse, and put more than one-half closely around the roots; the plants afterwards grew vigorously and blossomed well. For *Rhododendrons* and American plants it may be used more freely.

Whenever I replant trees or shrubs of any kind, I use some of the refuse, alone or mixed with the mould, to spread thinly about the roots, as it causes a rapid production of fine fibrous roots, which afterwards find their way into the loam most suitable to maintain their growth.

At the end of December last year I planted some *Roses* and dwarf *Pear* trees on the quince stock in my garden; but having no dung, and the soil being rather stiff and poor, I used the refuse as I have just described, and then mulched them with the refuse only, 5 or 6 inches deep, which effectually protected the roots from severe frost. Every tree grew vigorously and some bore fine fruit. However, as the refuse will not support the continuous growth of trees like stable manure, I determined to follow the advice of Mr. Rivers in his little book, "The Miniature Fruit Garden," and have

lately taken up all my trees, *Roses* and *Pears*, to replant them with dung. My gardener and I were both surprised to find such a mass of long fibrous roots, grown in one year, with the refuse hanging to them. I must observe that the refuse mulching was allowed to remain throughout the summer, and by watering it occasionally the ground was preserved from being parched and hardened.

I am just going to prepare an *Asparagus*-bed, and have directed my gardener to work in a quantity of the old refuse very freely with the soil and dung, and to sprinkle in a little salt. I shall have this turned over and well mixed at least twice before putting in the plants in March. This will make the soil rich and light, through which the *Asparagus* will shoot up strong and straight, as I have seen in the gardens of a gentleman who seems to have a mania for this refuse.—H. E., Surbiton.

BURY HILL,

THE SEAT OF A. K. BARCLAY, Esq.

IN travelling from London by the South-Eastern Railway, after leaving that labyrinth of lines which unite at London Bridge, the first few miles present the usual features offered by the suburbs of a large town. There seems, indeed, to be vast quantities of waste ground by the sides of the railway, more so than near most lines in less densely populated districts; but there is nothing to call for particular remark until the cold, bleak station of Redhill is gained—cold and bleak in winter, but pleasant in the extreme in summer—the new and rising town of Redhill appearing in full view, with its villas, and comfortable-looking dwellings clustered together in the valley, as well as crowning the various eminences by which the town is surrounded. Here the Dover and Canterbury lines turn off to the left, while the Brighton one proceeds straight on; but a branch of the South-Eastern curves round to the right, cutting through amongst the hills and deep valleys of Surrey, and it is a short journey on this line that brings us to Bury Hill. The scenery on the road thither is as much diversified as on any short railway journey I know. The deep cuttings and some high embankments give tokens of the vast quantities of sand which have rendered the name of Reigate one of our household words. A gardener travelling that way for the first time will see that there is no fear of fine white silver sand for propagating purposes ever becoming scarce, though he may envy the wasteful manner in which he sees it lying about. He may, however, console himself by reflecting on the fact that the overlying mould is neither plentiful nor of the best kind for cultural purposes. Some smiling vallies are passed through, the village of Betchworth is reached, and, leaving that, the eye instinctively rests upon the high chalk hill to the right, which is Box Hill, a favourite resort for picnic and other pleasure parties, and the traveller may remember being told that the Box tree grows wild here. Most of the boxwood required for various purposes was once supposed to have been obtained from this place; but large quantities are now imported from abroad, so much so as to cause fears of the supply being exhausted even in countries where the tree is more plentiful than in England. Box Hill, however, has, no doubt, contributed its share, and even now the plant is said to be plentifully spread over the waste, and with Yew, Juniper, and some Hazel and Birch trees, gives the top and abrupt sides of the hill a clothed appearance, which is rendered the more conspicuous by the white, chalky character of the surrounding ground.

Passing Box Hill, a short stage brings the traveller to the important town of Dorking, nestled as it were in a valley, the hilly district by which it is surrounded having more the stamp of distinct ridges than broken mountain scenery. Here we leave the rail, and a pleasant walk of about two miles brings us to the entrance gates to Bury Hill. A broad carriage road leads from the gates, curving right and left to meet the requirements of the ascending ground, and every now and then opening up fresh views, or, perhaps, a noble specimen of a tree planted by some former possessor arrests the eye. The curves and gradients are of that easy kind which modern roadmaking can find but little to improve upon. After traversing some distance this prettily rather than densely clothed eminence, another turn of the road

brings us in view of the mansion, which resembles one of those commodious structures erected in the end of the seventeenth or beginning of the eighteenth century, when the comfortable dwelling-house was beginning to take the place of the feudal stronghold of earlier times. The principal front is to the south, but the carriage approach is on the other side, and on account of the inequality of the ground, the entrance is one storey higher on that side than the ground is on the south; but even this inequality is nothing compared with the rise in the ground at the north side, for after allowing sufficient space for the requirements of a carriage entrance, a grass lawn in one unbroken slope rises. I should think, not less than 100 feet. This beautiful and uniform slope is about 250 feet wide at bottom, but narrowed in at top; and even beyond what might be called the top of this slope, another slope about 20 feet wide, still ascending, and at right angles with the front door, carries on the view to the top of the hill, on which an ornamental summer-house, or rather exploratory, for I believe it has been used for astronomical purposes, forms a suitable apex to an eminence commanding an extensive range of country. I may mention that the lower part of this fine slope is all of plain turf, and seemed to be somewhat steeper than the usual gradient adopted of late years—i.e., two to one, or a base of 2 feet to 1 foot in perpendicular height. The slope was certainly steeper than this, say five to three, and if the perpendicular was 100 feet, we have a surface slope of about 200 feet, which had an imposing effect. The margins of this slope were planted with St. John's Wort, which here grows admirably, while the opening through the wood, continuing the view to the summer-house alluded to, was faced with Rhododendrons, which here also found a home such as evidently suited their wants in every respect, excepting, perhaps, that more water would have been grateful during the past season.

As from the description of the high ground at the carriage side of the house, it might be inferred that the mansion stands on low ground, I must conduct the reader to the south side, and there he will see that in addition to the difference of the height of a storey in the ground level, the latter still continues to recede for a distance of 100 yards or more; we then come to a beautiful piece of water, fresh, clear, and sparkling, twenty acres or more in extent, which occupies a position in the valley. There is a well-wooded island in it, and the outline is at suitable places concealed by planting and at others shown, so as to give a natural appearance to a sheet of water, which in such a situation can hardly be too highly valued. A lawn with a few specimen trees sparingly introduced, so as not to impede the view, connects the mansion with the ornamental water. The dressed ground is for the most part on the opposite, or rather the eastern side of the mansion, but there are many interesting walks and corners carved out of the wooded hill, against which the whole reposes.

Passing the mansion on the north side, and proceeding eastward through a shrubbery, we come to the principal flower garden, which, to protect it from rabbits, is fenced in with close wirework, but excepting at the gates, by which the visitor enters, and one or two other places, the fence is everywhere concealed by shrubs skilfully arranged. The outline of this enclosure is somewhat circular, and two walks cross it in the centre, leading or pointing to important features in the ground. A basin occupies the centre, around which are arranged a series of flower-beds, these at the time of my visit being well filled with Geraniums, Lobelias, Petunias, Verbenas, and other bedding plants. These beds were all on the turf, and outside were some specimen shrubs, and behind these again the best kinds of Pinus. The entrances to this garden, four in number, were planted with dense masses of Azaleas, which by their healthy appearance must have presented a most gorgeous appearance when in flower. As it was, in September, the foliage had the rich crimson hue which this shrub puts on late in the season. Some hybrid Rhododendrons were also in adjoining compartments, while the deep dense green of a noble specimen of Abies Douglasii, bearing cones, was matched in another place by a good Pinus insignis, planted in 1840. The height of these trees I omitted to ascertain, but they were of fair timber proportions, and to all appearance were likely to attain a great size.

As an accompaniment to the flower garden alluded to, was a rustic summer-house, thatched with the refuse shavings obtained in making wooden barrel hoops. The sides of this structure were also of a corresponding rustic character, and were partially clothed with Jasmine, and a good variety of Silver-blotched Ivy. Some rockwork which I was told was the work of the young ladies, adjoined, the whole being overshadowed by some noble Oaks. From this point walks curved in various directions, several of them ascending the hill, which, as previously stated, was clothed with valuable timber, which had been judiciously thinned, and Rhododendrons, Laurels, Berberries, and the like, planted by the thousand many years ago. These, of course, gave all the cover that the most ardent sportsman could wish, at the same time large open spaces had been cleared here and there, and specimen Pines of various kinds planted. Generally speaking, these specimens were in groups, some having been planted twenty years and more, and others of more recent introduction at a later period. All, or nearly all, were named, a sort of brick being used on which the name of the specimen, its native country, and the date of planting, were imprinted on the sloping end before it was burnt, and, of course, capable of enduring as long as the brick itself. I was told that the maker was a Mr. Locker, of Kingston, and certainly they deserved to be very generally used, for without being obtrusive, they were sufficiently prominent to be seen by all who might wish to know the names of the trees.

Among other Pinuses I noticed a fine specimen of Picea cephalonica, promising to rival the Silver Fir in magnitude, Pinus laricio, and Pinus insignis, which, though only planted in 1840, seemed to vie with the natural occupants of the forest. Cryptomeria japonica nana, on the other hand, forms a dwarf compact bush 3 feet high, and 4 feet through, more in the character of Thuja aurea, thus resembling the normal condition of the species of which there were also excellent representatives. Taxodium sempervirens, which is generally supposed to require a damp soil, was here in excellent health in one of the driest spots in the kingdom. I am sorry I cannot say the same of Araucaria Cunninghamii, which, though doing as well as at any place where I have met with it out of doors, is evidently not sufficiently hardy to endure the climate of this country if left unprotected. Picea Webbiana, which does not thrive very well in most places, was better here than in many, and I was told that it perfected its seed. Some Cedars of Lebanon of much greater age were less promising than most things around them; but a fine specimen of Pinus cembra promised after a time to overtake some magnificent Silver Firs in close proximity. Picea nobilis and P. Nordmanniana were also well represented, the former taking the fine, conical, upright growth which renders it so great a favourite when it is well grown; the latter not so far advanced. Bushes of Thuja aurea were also to be met with in many places, where also a dwarf form of Abies, called A. Gregoriana, presented a dense deep green hue; while a still more dwarf or rather prostrate plant was Juniperus squamata. Ever and anon healthy thriving plants of Wellingtonia were to be met with in various stages of growth, and what must not be forgotten, some fine specimens of Deodar gracefully making their way upwards, while their bases had every appearance of the trunk being hidden from view for many years, so healthy, dense, and vigorous were they. I do not remember if there was a good specimen of Picea pinsapo, but believe there was, and most, if not all, of the lately-introduced species of Cupressus, Thuja, &c., were to be met with; but I did not notice all in detail. With one or two exceptions the whole were in excellent order, and the most of them were in positions which would enable them to grow on for many years without coming in contact with each other—a very common fault in many places where some of the finest specimens are to be found.

I have stated that the general features of the place are a steep hillside cut into ravines or gullies in various ways, the soil being sandy, and, doubtless, containing iron in more or less abundance, as the Rhododendrons succeeded so well, and ripened their seed and reproduced themselves in the common wood. A long period of very dry weather prior to the middle of September, when I was there, had told severely on the Kalmias and Andromedas, which were suffering much,

and one or two plants of *Rhododendron* were pointed out that had absolutely died from the drought; but in general all was luxuriance and health.

The good keeping of the place reflected the greatest credit on Mr. Whitehead, the gardener, to whose courtesy I am also indebted for the information above; and before leaving I must accompany him to the kitchen garden, which lies in the valley to the north of the mansion. Good high walls surround it, and some useful Grape-houses occupy the north wall. Peaches and Nectarines had been in great abundance on the walls. Strange to say, some fruit were growing in a glass case facing the south which were later than the same kinds on the open wall. The glass case consisted of tall sashes reared against the wall, the bottom being about 4 feet from it, and the trees were trained against the glass rather than against the wall, and, consequently, exposed to the back draught, which had neutralised all the advantages of the glass. The fruit here, as well as on the walls, was good; but the latter was said to be the better flavoured. Mr. Whitehead had also been very successful in Mushrooms, and in fact the general condition of every crop was good, considering that a very dry period had been passed through. Unfortunately my visit to this department was a hurried one, but I saw sufficient to convince me that Mr. Whitehead had not accomplished all that was done without difficulties, and that these had been successfully overcome; while the liberal manner in which the choicest Pinuses had been planted about, and the general formation of the grounds reflected the highest honour on his employer, who, I hope, may long occupy Bury Hill, which, with its noble sheet of water, its slopes, its secluded and romantic walks, its varied and interesting views, as well as choice plants and good keeping, has a claim to attention which few places possess.—J. ROSSON.

WATERING NIGHT.

"A little water is a dangerous thing;
Give much, or none, from the Alinean spring."

—OLD PARODY.

I suppose that every one who has lived in a country village knows something about "watering night" in summer time. Simpkins had for many years been a curate. Visitation after visitation Mr. Simpkins had been called over as "curate of the same." At last the bishop, at the instance of the archdeacon and some of the superior clergy, as well-to-do rectors are called, gave him a living—not a very fat one, but still it was an advance on the curacy, and enabled the Simpkinses to take up gardening in a modest way. They began floriculture with two dozen standard Roses. There was besides a little lean-to greenhouse, in which, alas! there was very little "green."

Let us take an "inventory," as Tom Tix expresses it in "Nicholas Nickleby," when reviewing Madame Mantalini's goods under an order from the sheriff.

Here is the old Black Hamburgh somewhat bigger than Elder berries; here are pot-bound *Pelargoniums* (*Geranium* is a better word, it is more like the Greek for crane's-bill); here is in fact a burnt-up specimen of "something, everything, and nothing."

It is watering night both under glass and outside of it. Robin, who had lived with them when S. was curate, now advanced to head gardener at 12s. per week and house rent free (expected to wait at table, though, party nights), is summoned. "Robin, have you forgotten it is watering night? Tell Eliza to bring down my coalscuttle bonnet with gipsy frill, and do you fetch my watering-pot (aside, about the size of two teapots), with long snipe spout. I am going to copy, as Mr. Radclyffe has advised us, 'a thunderstorm.'"

Robin had not forgotten "watering night." No night did he dread so much as "thunderstorm" night, and so answers somewhat surlily, "Oh, yes, ma'am, let us copy a wonderstorm." He had nearly got out the words "and forked lightning," when a look assured him that if he attempted to be pert she would tell his master and have him discharged.

"Now fetch a bucket of water, and don't be disagreeable." The water fetched, the pot with snipe spout is filled, and down comes the "thunderstorm." "There Robin, I think I have done it now."

"Oh, yes, ma'am, if the Giant and Baronne don't bloom now I'm a Dutchman."

"Now Robin, don't use offensive similes; I caution you once more. Fetch another bucket of water; let's begin *de novo*."

"Oh, yes, ma'am, as you say, let's begin again *de Jovo*." "Robin, don't you see dear S. looking out of the 'studio' window? I have only just to hold up my little finger and he will come: length of servitude won't serve you. Come, be good-tempered, Robin. *Bonos mores* makes a man, or as dear S. says when he hears my voice, '—*emollit mores, nec sinit esse ferus*.' Come, fetch another bucket and Parkes's fork, and, as Mr. Radclyffe advises in his learned articles, let us 'touch all the points of the roots.'"

At this Robin chuckles with delight. He is always spiteful thunderstorm nights, and is glad of an opportunity of doing as much mischief as possible. Accordingly he tumbles the baked ground, and breaks off as many roots as he can.

Now, if Mrs. S. had stooped down and examined this tumbled ground she would have discovered that her thunderstorm had not penetrated the depth of a sheet of Bath vellum, and that Robin had effectually touched the points of all the roots with Parkes's fork. She has, however, had enough of it for this night, and exclaims, "Well, I never! It's teatime, dear S. is beckoning. There, Robin, I forget and forgive. Go in and get a pint of beer, and don't try my patience another time."

Robin cheers up a little, but he does not like watering night; and in a few days he has his revenge, and runs in with smothered delight to say that the Giant and Baronne are both dead, and that there is nothing like touching all the points of the roots with Parkes's fork and missus's thunderstorm.

In fine, whether a plant be in a pot or in the open ground, it is useless watering unless sufficient water penetrates to touch all the points of the roots. A little moving of the ground the day after with Parkes's fork will be serviceable, but beware of touching all the points of the roots.—W. F. RADCLYFFE, *Rushdon*.

WINTERING BEDDING PLANTS.

FOR the last two winters I have preserved my bedding plants in ordinary Cucumber-frames, by placing a small petroleum lamp in the centre of the frame, with a square piece of tin, above the flame, nailed to the frame. The lamps, which cost 1s. or 1s. 6d., are sold by all ironmongers. The spirit costs 3s. per gallon, and the consumption is not great, as the wicks are small. I adopt the additional precaution of surrounding my frame with straw about a foot thick; the glass is also covered at night with straw mats.—G. C., *Chadlington*.

FRENCH VERSUS ENGLISH ASPARAGUS CULTURE.

MR. WATSON, at page 510, finds fault with me for giving my opinion on the French system of growing Asparagus as applied to the climate of England. I can only restate my conviction, after growing Asparagus on both systems—English and French—that "there is no benefit in the French system," for we do not measure the value of Asparagus in England solely by its appearance, but according to its utility.

Growing Asparagus with a blanched shoot is no new practice even in England, and it is one not likely to take with the English, though it may be in request at aldermanic dinners. I have eaten French Asparagus, and though it be a little more tender than that of English growth, after discussing about 3 inches of the tips the lower part reminds me of what I used to find a stick of liquorice in my youth, exceedingly woody.

As to my thinking nothing can be good out of England, I know, however much some people can see in other countries, that England, and especially her gardeners, are looked upon as patterns of that which is good. It has been said that we should never be able to raise as good Roses here as in France, but John Hopper, King's Acre, and

other results of English efforts, prove that in our ill-adapted climate we can equal even the French in Rose-growing. We have done what other nations said we never could, and L'Hérault's assertion that "we shall never grow as fine Asparagus in England as they do in France," may be classed as one of those impossibilities. We have grown as fine Asparagus in England as was ever grown in France, if that named by Mr. Watson be the heaviest grown there, and Englishmen can grow fine Asparagus without worn-out vineyards.—G. A.

ROSES IN THE NORTH OF IRELAND.

I FULLY agree with the remarks of your reverend correspondent in your Number of December 20th regarding Roses on the Manetti stock. The result of my observations and practice leads me to fully corroborate your correspondent's article. I found Roses generally do far better and bloom more profusely on the Manetti stock than the Briar. Roses budded on the Dog Rose were very subject to moss on the stocks, the result being a sickly plant and premature death: whereas Roses worked low on the Manetti escaped, and grew luxuriantly. As regards kinds adapted for the north of Ireland, all kinds which thrive well in the midland counties of England would, I think, do well, even in the north of Ireland. The winters are not there so severe and fatal to Roses as in some parts of England. When such things as *Linum flavum* will stand out of doors unscathed, I think the generality of the Rose tribe will not be injured. I can only say that while I was in Ireland I never met with a death resulting from frost.—JOHN EDLINGTON, *Wrotham Park, Barnet*.

MANAGEMENT OF FLOWER SHOWS.

IN the locality from which I write we have had for the last six years a very successful flower show, but I am afraid its days will be short if some alterations are not made in the rules and committee of management.

In the first place, exhibitors are allowed to purchase any plant eight weeks previous to the exhibitions. This is quite long enough, and where a collection may casually happen to lose a plant it is quite right that a short time should be allowed to fill its place up. This I do not complain of; but when a person purchases an entire collection to compete for the prize just eight weeks before the show, thus preventing or taking the place of one who has grown his plants from mere cuttings, and has cultivated them as many years as his more wealthy neighbour has done weeks, this seems to me unfair. By such a proceeding many old and first-class cultivators will cease to exhibit against a rich man, and I, for one, think very properly so too.

In the second place, there is a committee of about twenty in number, and two of them are the most determined of the prizetakers. The remainder of the committee care not who get the prizes, all they desire is a good exhibition and large company. In such a case it will not be difficult to demonstrate that the power of these two exhibitors predominates in the committee, and the unequal schedule of prizes will clearly show that its compilers are interested in competing for the prizes.

Another, and by far the greatest mismanagement, is in the choice of judges. Complaints against their decisions are numerous. Two judges are chosen in each department, with a referee in cases of collections being in their opinion of equal merit. This referee ought, as well as the judges, to be, as far as can be, a stranger, and more so to the plants; but I have too often heard that they only decide in favour of those collections with which they are acquainted when two are so equal that it is difficult to say which is the better; which difficulty often occurs. Under such judges the stranger has but a poor chance of winning many first prizes. Are there no means of leaving the selection of the judges to the exhibitors? How are they selected at the great London shows? At all events, let the names of the judges be known, and then exhibitors may use their own discretion as to placing their productions before them.

I am also of opinion that it is much better that all these horticultural shows should be managed without the exhibi-

bitors being on the committee. I shall feel greatly obliged by a small space for these notes in your columns, in order to elicit the opinions of some of your correspondents, as they may be of great service to the managers of many provincial shows, which is my object in writing.—R. F., *Thirsk, Yorks*

DRESSING THE STEMS OF ROSE TREES.

I AM purposing to scour the stems of my standard Ros with Gishurst compound, in the course of next month (January), in the same way that I have found so beneficial to the stems of fruit trees. Would you recommend half pound of the compound dissolved in a gallon of water: about the right strength? I suppose it would be all the more efficient if applied warm—say at a temperature 100°. Should I be in danger of doing mischief if I were to syringe the heads of the trees at the same time with the same solution? The scrubbing, I conclude, should be done in the absence of frost. I suppose any temperature above 36° would be suitable.—COUNTRY CURATE.

[Perform the operation in mild weather, and treat the tops, with a brush or syringe, with the mixture not so strong as for the stems.]

POTATO PRODUCE.

"AGRICOLA" having doubted the results of the experiments of "W. W. H., *Prescot, Lancashire*," with Paterson Blue Potato, I am induced to offer a few remarks on the growth of this root.

First, I beg to notice that in neither of the communications of "W. W. H.," nor of "AGRICOLA," and "UPWARDS AND ONWARDS," is mention made of the distance apart at which the sets were planted. "AGRICOLA," however, calculates the produce per acre, according to the produce obtained by "W. W. H.," from 14 lbs. of sets, to be upwards of 50 tons per acre. "The quantity of seed for an acre at the ordinary distance," continues "AGRICOLA," "with rows 3 feet apart &c." Now, what the ordinary distance may be is the question of which we are left in total ignorance, and this one of the greatest points in computing the produce per acre, for it does not follow that sets 1 foot 6 inches apart will yield as much per acre as those at 2 feet apart, or 3 feet apart. Nor do any of them give the weight of the sets. These might weigh 4 ozs. (a large set), or 2 ozs. each and the ground being planted with the larger size in rows 3 feet apart, and 18 inches asunder, 9680 sets would be required to plant an acre, and there being 56 sets in a stone each weighing 4 ozs., the return per acre would, at forty-four times the weight of the sets, be a little over 47½ tons; but were the sets only 2 ozs. each, the produce per acre would be only 23½ tons.

Experiments of this kind are apt to lead to an incorrect conclusion when the produce per acre is calculated by the produce of a certain weight of sets without stating the extent of ground occupied by them. We do not want to know what kind of Potato gives the greatest yield from the least seed, but the Potato that affords the heaviest crop from the least extent of ground. We want to make two blades of grass grow where one only grew formerly. Potato affording a large return per root require a large amount of room for their shrub-like haulm, whilst those with small haulm can be grown in one-half, or a proportionately less space, so that with two kinds the results may be very different, and this through planting at improper distance. Suppose we plant the Scotch Regent in rows 2 feet apart and only 1 foot from set to set in the row, the return would not equal that of the Ash-leaf Kidney, for the distance would suit the latter, but be insufficient for the requirements of the former; yet plant the Scotch Regents in rows 3 feet apart, with the sets from 18 inches to 2 feet apart, and they would give nearly double the produce of the Ash-leaf Kidney though planted at a much greater distance.

Incredible as the return of Paterson's Blue Potato, given by "W. W. H.," may seem to "AGRICOLA," I must state that for 14 lbs. of sets to yield 618 lbs. of tubers, is not at all extraordinary. There being 56 4 ozs. sets in 14 lb the yield per root is only 11 lbs., no great weight that,

being 5 lbs. less than a root of Negro grown this year by "UPWARDS AND ONWARDS," and noted at page 466.

Great as these weights may seem, I have communications from different parts of the kingdom, which show that the weights named by "W. W. H.," and "UPWARDS AND ONWARDS," are comparatively poor. One of these instances of extraordinary produce I copy, with the name of the grower, the gentleman in whose garden the two roots were grown, and the particulars of their cultivation.

The note is from a worthy representative of gardening, and the return so far eclipses any I have of the growth of this root, as to appear incredible; but it will best tell its own tale.

"December 12th, 1864.

"I must tell you about my Potatoes. I planted on the 24th of March two sets of the Scotch Regent Potatoes, 4 feet distant each way, and 2½ inches deep. The ground was dug 24 inches deep twelve months previously, and well manured. When the shoots were 6 inches high they were soiled, and the stems brought down or laid out—that is, spread out, soil being laid in the centre as they grew, and the haulm pegged down, until they all became one mass of foliage. They were watered with liquid manure, soot, rape dust, and salt when they required it, about once in six or nine days. They were taken up on the 2nd of November, and the produce was—No. 1, 43 lbs., number of Potatoes 101, six weighed 11 lbs. 3 ozs., one Potato out of the six weighed 2 lbs. 9 ozs.; No. 2, 41 lbs., number of Potatoes 98.

"My master was challenged by another gentleman to grow Potatoes for a wager of £1, and that was the cause of my trying my hand at the feat to be accomplished. The gentleman came to see the Potatoes taken up, and he said if he had not seen this done he could not have believed such an enormous quantity could be grown. He has been experimenting on Potatoes for several years, and thought no one could beat him. The heaviest root he ever grew was 20 lbs. He never told us the weight of his, but owned he had lost his sovereign.—FRANCIS LUPTON, *Gardener to S. Grimstone, Esq., Clifford, Tadcaster, Yorks.*"

In the foregoing we have a return of 100 times the quantity set in number, and of 168 times according to weight; but this produce, prodigious as it is, is only some 51 tons per acre, or 3½ tons more than the weight obtained by "W. W. H.," though the sets produced nearly four times the weight per root. This is, of course, owing to the distance apart being greater.

The above is the heaviest crop of Potatoes as yet grown. I may state in conclusion, that 200 tubs of 20 stone are considered a good crop for an acre of warp land, such as that near the Ouse, in Yorkshire; but I have a note of 400 tubs having been taken up from an acre of such land, which at 20 stone per tub is 50 tons. From 200 to 250 tubs is the average of the produce of an acre of York Regents, and taking the mean of twenty of the highest returns the figures are 223 tubs, or a little over 27 tons. The average of fifty acres from as many different growers is, taking a fair season, 52 tubs, or 6½ tons, under ordinary farming worth £20, sold as grown, but such land is not well suited to the Potato.

Would it be troubling "W. W. H.," or others of your correspondents to inform me if they find Paterson's Blue distinguishable from Skerry Blue, or Paterson's Regent from the Scotch Regent? Notwithstanding the introduction of many new sorts there is none surpassing the Ash-leaf as an early, the Lapstone as a second early, and the Pink-eye for table, and to them may be added the Fluke, though it is not anything extra in flavour, and it is almost always yellow. Arrowsmith's Seedling is, I find, an excellent Potato after the Pink-eye, but it is only a poor cropper. Almost invariably the largest croppers are the coarsest Potatoes, and have deep eyes, which is a distinguishing sign of a cattle Potato.—G. ABBEY.

WHAT IS A BUSHEL OF POTATOES?

I AM very glad to find that "W. W. H.," in writing of Potatoes at page 472, describes the quantity grown by weight; for measures are subject to so many local customs, that the term "bushel" carries with it a very indefinite meaning, although perhaps not so much so as a yard of butter in the

eastern counties, or a gallon of bread in Kent. Still, a bushel of Potatoes does not always imply the same quantity in all places. In some the old local measure is used for Potatoes, although the imperial one is employed for corn, and the difference in certain cases is very great indeed. The plan, however, of giving the weight is certainly preferable even to the imperial measure, as so much diversity of opinion exists as to what ought to constitute a heaped bushel. Some contend, unreasonably enough, that the buyer has a right to pile the Potatoes on the measure by hand, thereby giving a dexterous person the advantage of putting on almost as many as he likes; others affirm that Potatoes may be poured out of a sack or basket into a bushel, and all which lie on without any handling constitute the quantity sold; while in many districts the custom is to disregard the measure entirely in the way of using it, but to consider a certain weight to constitute a bushel, generally, I believe, 56 lbs. This plan is certainly preferable to the measure; but in adopting it the term "bushel" might as well be dropped, and the article sold by weight at once. "W. W. H.'s" plan of giving the weight of the seed and crop is certainly a step in the right direction, and I trust other writers will adopt it, as the pound avoirdupois is, I believe, the same all over England; but a load of hay, an acre of land, a gallon of bread, or a bushel of Potatoes often enough differ widely in the quantities they imply, and the sooner local terms are dropped the better, especially when recording experiments or other matters intended for general information. Weight seems a much fairer way of describing quantity than measure. I am glad to see that in some of the Lancashire markets fruit and other things are sold entirely in that manner. The justice of this mode of buying and selling will no doubt cause its adoption in other districts, even in spite of long-established customs, prejudices, and perhaps some other motives less justifiable.—H. L.

WORK FOR THE WEEK.

KITCHEN GARDEN.

ALL trenching, rough digging, gravelling walks, &c., ought to be pushed on as fast as possible. Now is also a good time to keep burning and charring all the prunings of trees and shrubs, rubbish, sawdust, &c.; where ground has been trenched and well manured with dung, charred earth and wood in good doses have a wonderful effect in restoring fertility and keeping grubs and slugs in check. *Asparagus*, if the soil in the bed should become dry give them a liberal supply of water, so that it may reach the roots. *Carrots*, where young ones are wanted early prepare a slight hotbed for the purpose, cover it with leaf mould to the depth of 6 or 8 inches, in which sow the seed. A little Radish seed may be scattered on the bed at the same time, but they must be drawn in a young state. *Lettuce*, where there is a scarcity of autumn-sown sow on a slight hotbed, or in boxes in a forcing-house, to be afterwards pricked-out into a frame. Fill up all vacancies in Cabbage and Colewort-beds with plants kept back for that purpose in the autumn, and keep the surface about them constantly hoed and stirred with a fork. Endeavour to keep well up with all work in this department, the time is fast approaching when you will find the advantage of having done so.

FRUIT GARDEN.

Continue the operations of pruning and nailing the hardier kinds of fruit trees at every available opportunity. Have a plank to stand upon, and if very cold, wear also a large pair of wooden clogs. No considerate employer will ever censure a man for being careful of his health. Where birds are very numerous the pruning of Gooseberries may be deferred for a time, as if sharp weather prevails during this and part of the following month, they are apt to be very destructive to the buds. Prune espalier Apples and Pears, and fork up the ground about them in frosty weather to disturb and destroy insects. In the orchard thin out cross and crowded branches from Apples, Pears, and Quinces. It is a great mistake to have too much wood. Scrape off moss and lichen from the stems, and, if time will permit, dress both these and espaliers with a mixture of quicklime and clay, made to the consistence of thick paint. If this is done well there will be no need to scrape them for some years.

FLOWER GARDEN.

The planting of shrubs and choice trees may still be carried on. These operations should be prosecuted vigorously as long as open weather lasts, and brought to a close as speedily as possible. Dahlia roots should be occasionally examined, in order to counteract the effects of damp. If unfavourable weather should occur much incidental work relating to the flower garden may be forwarded, such as the preparation of nails, shreds, and ties for training climbing plants, stakes for supporting the stems of such as require them, labels of all kinds and sizes, the construction of covers for protecting purposes, repairing rustic baskets and tubs, mixing composts, cleaning pots, and the breaking up and preparation of materials for the drainage of pot plants.

GREENHOUSE AND CONSERVATORY.

As severe weather may now at any time be expected, a good supply of dry litter, fern, or other such materials, should be in readiness for extra covering when required. If not already done, lose no time in getting under cover a supply of the various loams, peat, &c., required for spring potting. Keep the conservatory at a temperature of about 45° by night, raising it to 55° in the day, with plenty of air at every favourable opportunity, and the house may have 60° or 65° by sun heat without injury. Keep the atmosphere moderately moist, as much for the preservation of the flowers as for the comfort of the visitors. Stove plants will take no injury for a few days in this temperature; but hard-wooded plants, such as Heaths, should not remain more than a few days at a time in such a temperature. The greenhouse in the generality of places is a mixed affair where hard-wooded and soft-wooded plants are obliged to be together. In such places a compromise must be made in the treatment by keeping the air a few degrees warmer than Heaths and other Cape plants require, and yet sufficiently warm for Pelargoniums, herbaceous Calceolarias, &c. Arrange the plants in groups, so that air may be admitted to the Heaths at times when it would be injudicious to admit it to soft-wooded plants. Camellias will now be swelling their buds, neglect in supplying water must be avoided, and attention should be given so that it is applied in proportion to the activity of the growth of the plants.

STOVE.

The season is not yet advanced sufficiently to allow an increase of temperature. A steady heat, ranging between 60° and 65° may be sustained, if the weather continues open. The occurrence of frost will demand a reduction of temperature. Allow the thermometer to sink at night. Artificial heat without light, as has often been explained, is injurious to vegetation. Recollect always, that stove plants, as well as others, require fresh air. The stove may still be gay with the beautiful *Gesnera zebrina*, *Euphorbias*, *Begonias*, &c. Some few Orchids will now be in active growth. These must be supplied with moisture as opportunities allow. Keep *Ixoras* close to the glass and at the cool end of the house.

FORCING-PIT.

Remove the plants from here to the conservatory as fast as the flowers expand, and introduce others from the reserve for succession, placing them first at the cool end of the pit so as to excite them gradually. A few Pinks and Sweet Williams may be started, and plenty of Lily of the Valley, Sweet Briar, &c. Gardenias must also be started, and as *Stephanotis* is a great favourite with the ladies, a plant or two should be placed at the warmest end of the pit. Maintain a fresh, growing, moist temperature of from 60° to 65°, or 70° with sun heat, and give air, warmed before it gets to the plants, at every favourable opportunity. Syringe early on sunny days, and keep a moist atmosphere, unless the weather is very dull.

PITS AND FRAMES.

As long as the temperature here can be kept from 32° to 35° little harm will ensue by keeping them covered. It is a good practice to tilt the back and front alternately whenever the glass rises above 32° out of doors. By these means the accumulating damp is dispelled, and the plants receive much light as will prevent etiolation. Take care that the roof is well protected, using a mat near the glass and then a coat of dry litter, the thickness of the coat to depend upon the state of the weather. — V. KILMEY.

DOINGS OF THE LAST WEEK.

Ice-collecting.—Keeping Monday as a holiday, we set to work on the Tuesday and Wednesday to collect what ice we could, but had to be content with less than the usual quantity, owing to the scarcity of water as yet in this neighbourhood. The ice was in capital order, 1½ inch in thickness, and the roads, clean and dry, made the job a comfortable one for men and horses. A heavy fall of snow, or a good rain, would be of great benefit in this neighbourhood. Large ponds, that used to be full to overflowing at this season of the year, had scarcely enough in a small corner to meet the demands of the cattle; and taking what little ice there was, in such circumstances, was not to be thought of, the necessities rightly coming before the luxuries of existence. We feel we are now secure for at least one year and a half, and if we can collect a little more from a future frost, we will be pretty secure for two years. Our ice-well is an old-fashioned egg-shaped one, with single wall, and a long passage. We think the ice goes a little more quickly than it used to do, owing to the cutting down of the Spruce and other trees which surrounded it, and to birds and rabbits scraping away the earth, and burrowing in the earth-covered arch. If we can get at it, we would like to put a cover of a foot of earth all over the dome, and plant with Laurels and other evergreens. A few Spruce Firs, just thin enough to enable their branches to cover the ground, would also be an advantage, and so would their habit of sending their roots along the surface, and thus keeping free of the brickwork. Trees that send their roots deep down would be unsuitable, as we have found even cement walls penetrated and cracked by such roots. We once saw a seemingly sound wall topped over by the roots of Oak and Elm loosening and throwing up the foundations. This was even less to be wondered at than noticing, in another case, heavy flagstones raised out of their place by a crop of Mushrooms. Some spawn must have been present in the soil used for levelling. The massive solidity of the stone had to give way before the vital forces of such an humble agency as a Mushroom.

Holidays.—Alluding to Monday as a holiday, shall we offend by saying a word on the subject? We will not advocate the importance of working men having a few of such holidays in the year, we will assume that is freely granted. We will also assume that the employers who generously give such days as Christmas and Good Friday, &c., and pay the usual wages, will lose nothing by such generosity. The man is hardly worth having who will not more than make up, by extra exertion and attention, for such proofs of kindness. To constrain a man to be idle on such days, and then mulct him of that which keeps the loaf in the cupboard for his little ones, will be about as effectual for imparting pleasure as forced prayers would be for securing a blessing. What we wish pointedly to allude to, is the desirability that such holidays as the 26th ultimo, should be general in a district. We saw numbers of farmers' carts and waggons loaded on the highway, and later in the afternoon than they are generally seen on other days. We believe that the thus keeping the horses and men employed proceeded not from any want of kindly feeling, but from something like a desire to show an independent singularity. We arrive at such a conclusion because when it so pleases such employers, and nobody else is thinking of such a thing, they will give their men a holiday, a dinner, a cricket match, &c. We must not conceal, however, our conviction, that such kindness is strongly seasoned by vanity, and the desire for notoriety. Such an unwonted holiday, however seldom given, will be the talk of the neighbourhood at the time, and most likely will be recorded in the columns of some local newspaper. All such notoriety would have been lost, if the holiday had been given at the same time with that of the generality of the neighbours. The fact that even the humblest labourer sees through the whole affair, may help to lessen the prevalence of this ambitious singularity. If not, then a regard for their own self-interest, as well as the interests of others, may have some force. The sullen, wearied, if not morose physiognomy of carters and waggons, told at once they felt somewhat aggrieved at being forced to labour when their neighbours were enjoying themselves with their friends. Such men would, no doubt, do their day's work then and afterwards;

but it would merely be a day's work, a very different thing from the labour prompted by cheerfulness, and a sense of kindness conferred. We have no hesitation in saying, that before the week was out, the value of the Monday's work was more than gone. Then, it is not only themselves such sticklers for singularity hurt, their one own prominent holiday becomes prejudicial to their neighbours. It matters not, though these neighbours may give double or quadruple the indulgence that they do, when their one great holiday of their own choosing comes, with its due amount of trumpetings for fame, the less or greater will be the unsettlement of the workmen in the neighbourhood. They may have three or four holidays instead of this one so trumpeted; but this is all apt to be forgotten whilst the vision of others enjoying themselves, whilst they are working, is ever present to their minds, and with what results, every superintendent of labour that is paid by daily wages, pretty well knows. The abettors of singularity, then, even if they choose to forget the strong feelings for social intercourse, which prompt people when they rejoice, to rejoice in company, may be so influenced by their own self-interest, as well as the interest of their neighbours, as to promote, instead of prevent, the general observance of our national holiday, unless when interfered with by the claims of necessity and mercy.

Protection.—The details as to the kitchen and fruit garden would merely be a repetition of previous weeks. As respects everything tender in vegetables, fruit, and flowers, we never had an easier Christmas. The frost was so mild that little covering was given where artificial heat could be applied; and yet it was severe enough, and the days dark enough, to warrant us having all our cold pits and frames, where plants and vegetables were kept, shut up and covered up from Friday, the 23rd, to Thursday, the 29th, when everything was uncovered, as the frost was gone. As stated the other week, provided such shut-up plants are cool enough not to grow, it matters little at this season whether the darkness of their night should be sixteen hours, or sixteen times twenty-four hours in duration. If the heat enclosed is sufficient to cause the plants to elongate and grow, the results would be different; where heat is applied light must also be given.

SUNK PITS OR HOUSES.

Three correspondents have inquired if they may safely follow out the plan indicated by "ISLS OF WIGHT," at page 511. With every desire to be grateful for the good idea suggested, we must, we fear, answer decidedly in the negative. Mind, if the preservation of roots, fruits, and vegetables with a frost-proof roof were the objects, then we would subscribe to almost everything that "ISLS OF WIGHT" holds out. Were the sinking of walls as much as possible below the surface to secure these walls from the variations in our atmosphere, as respects heat and cold, then we so far agree, and thus accept the proposition that such houses and pits will require less heat than one with the walls exposed, and more especially if these sunk walls are insulated from the surrounding soil by enclosed air, or other non-conducting material: hence we find the importance of surrounding the high exposed walls of pits in winter with straw, neatly laid on. In our correspondent's sunk house or pit he would receive the above advantage less or more from the sunk walls, but then the glass roof, and the radiation of heat from it, would, ere long, in a cold night, make the bottom of this six-feet-deep pit as cold, nearly, as the outside atmosphere. This would, no doubt, be to a considerable extent neutralised by the stretched covering beneath the glass; and so it would be by a double glass roof, but these are equal preservatives in the case of pits partly or wholly raised above ground. Besides all this there are two objections against this deep sinking—the minor one, the diminution of light just at the season when, owing to the oblique rays of the sun, light is most valuable; and the greater objection would be the almost impossibility of keeping plants from damping in such a deep-sunk place, without means being taken for drainage, insulating the walls, and securing ventilation, that would be more troublesome and expensive than a pit built, protected, and heated in the usual way. Though we thus express our opinion plainly, we are not the less thankful for the ideas presented, so suggestive of improvements.

ORNAMENTAL DEPARTMENT.

Pits exposed at the sides were covered neatly by an inch

of wheaten straw tied on, which will make the entrance of frost there next to an impossibility. Calceolarias had a little litter thrown over the glass, and a few tree leaves thrown over all. There is no better protection from frost than these leaves, if at all fresh and dry, the drawback is, that they are apt to be blown about and make such a litter, and, therefore, we only use them on an emergency; but anything is better than letting the frost in. The disciples of neatness in the extreme, must use fire heat in some shape, or have ever so many thicknesses of mats or frigi domo, to keep John Frost at bay. As frequently stated, wooden covers, and a little straw or hay in very extreme cases, are the best of protections; but then many of us must make the best of what we can get, and visible utility does much to neutralise an ugly, rough appearance.

A slight, neat covering, even of frigi domo, or a mat, will be of much service in a cold night, even where fire heat is used, as less drying heat will thus be necessary—a matter of much moment in low houses and pits, where the amount of air enclosed is but limited. The reason why plants often flourish better in lofty, large houses, is just owing to the abundance of air all round them, and the greater slowness with which that air is changed in its properties and temperature. Hence though Geraniums will flourish well enough in a pit, with but a limited amount of air and light falling chiefly above them, it is rarely they do so well as in a loftier house on a stage, where air and light permeate all through, below, and around, as well as above them. Cold and heat tell also much more slowly and gradually on such houses.

The giving air, therefore, which must now be done with care in all houses, must be attended to with extra care in low houses and pits, just because they are so much easier heated and easier cooled. Half an hour's bright sun, that would do no harm in a large lofty house, but rather tend to give an active motion to the enclosed atmosphere, might be enough to injure very much the denizens of a small pit or frame. A little air, and early, at the highest point, will be the true safeguard; and, provided that is given early, to prevent accumulated moist heated air, the gradual rise of the temperature by sunlight will do little harm. With the above precaution, sun heat will scarcely be able to draw or weaken a plant. The time—the early giving of air—is of far more consequence than its quantity. In such sunny days as we have sometimes had lately, but the atmosphere cold behind the sun, an inch of air at the back of a frame, early, as soon as the sun began to tell on the glass, and adding a little more as the sun was at the meridian, reducing in the same way, and shutting up by two or three o'clock, would be far more agreeable to the plants than letting the house or pit alone, and then giving 6 inches or a foot by ten or eleven o'clock, thus giving the plants a vapour bath for one part of the day, and for the other part a dry, cold, scorching air, to help to mummy them into skeletons. One-half, or three parts, of the mishaps with so many of our amateur brethren proceed from the carelessness as respects early air-giving. Even city men would not need to give so many somewhat puzzling directions to Jane or Mary, as to their pit or little house, if they would only themselves give a little air at the top before they took their breakfast, and started for business by rail or omnibus. A gradual rising by sun heat after that, and as gradual a sinking to the point of safety, would be much better than the sudden changes effected by careless air-giving.

Even in dull muggy days a little air should thus be given, and, where fire heat can be afforded, that is better applied during the day than at night, allowing the heat to get low as the heat is taken away. Where a flue or pipe can be used, the safest plan, at this season, would be to keep always a mild heat in the heating medium. This would provide against a sudden frost at night, and, in a mild muggy day, would keep the atmosphere in motion, and allow of a little air being given without too much lowering the temperature.

In watering we have been careful to use as little as possible by spilling it on stages or paths. In cold pits it is best to take a dry plant out, water, and, when drained, replace it. In stoves, where a high temperature is given, moisture must be used for evaporation, to prevent the air getting too dry; and the keener the frost, and the stronger the fires, the greater the quantity of moisture needed, to

prevent the atmosphere becoming too arid. In houses at low temperatures, such as greenhouses and pits, from 40° to 45°, such moistening of the air will not be required, unless in severe frosts, indeed, when sprinkling the stages and paths slightly may be an advantage. In mild muggy weather, the escape of moisture from the pots, and the naturally moist state of the atmosphere, will render all artificial additions of moisture to the air unnecessary. A little fire heat, to make it drier, will oftener be required, and that will, too, give movement to the air, and thus benefit the plants. A little consideration will make all right.—R. F.

COVENT GARDEN MARKET.—DECEMBER 31.

In consequence of the holidays trade is not so brisk as it was before Christmas, and supplies continue ample for all requirements. Apples and Pears are still plentiful, but the best specimens of the latter for dessert purposes command a high figure. Grapes and Pines are quite sufficient for the demand. Of the former some excellent Black Hamburgs are to be had, as well as good bunches of Barbarossa. Greens of all kinds are abundant; Cornish Broccoli is now beginning to come in in quantity; and of Potatoes there are heavy arrivals both by the Great Northern and coastwise. Cut flowers chiefly consist of Orchids, Camellias, Azaleas, Pelargoniums, Roses, Heaths, Chinese Primulas, Poinsettia, Lily of the Valley, and Early Tulips.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples..... $\frac{1}{2}$ sieve	1	0	2	0	Melons.....each	2	6	4	0
Apricots.....dos.	0	0	0	0	Mulberries....punnets	0	0	0	0
Cherries.....lb.	0	0	0	0	Nectarines.....dos.	0	0	0	0
Chestnuts.....bush.	14	0	20	0	Oranges.....100	8	0	10	0
Currants, Red..... $\frac{1}{2}$ sieve	0	0	0	0	Peaches.....dos.	0	0	0	0
Black.....dos.	0	0	0	0	Pears (kitchen).....bush.	5	0	10	0
Figs.....dos.	0	0	0	0	dessert.....dos.	1	6	4	0
Filberts.....100 lb.	40	0	60	0	Pine Apples.....lb.	5	0	8	0
Cobs.....do.	70	0	80	0	Pistons..... $\frac{1}{2}$ sieve	0	0	0	0
Gooseberries..... $\frac{1}{2}$ sieve	0	0	0	0	Pomegranates.....each	0	6	1	0
Grapes, Hamburgs lb.	2	0	6	0	Quinces..... $\frac{1}{2}$ sieve	4	0	6	0
Muscats.....do.	5	0	8	0	Raspberries.....lb.	0	0	0	0
Lemons.....100	5	0	10	0	Walnuts.....bush.	14	0	21	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....each	0	0	0	0	Leeks.....bunch	0	2	6	0
Asparagus.....bundle	10	0	15	0	Lettuce.....score	2	0	4	0
Beans Broad..... $\frac{1}{2}$ sieve	0	0	0	0	Mushrooms.....pottle	1	6	2	6
Kidney.....100	2	0	3	0	Musd. & Cress, punnet	0	2	0	0
Beet, Red.....dos.	1	0	3	0	Onions.....bushel	4	0	5	0
Broccoli.....bundle	1	0	3	0	pickling.....quart	0	6	0	8
Brussels Sprouts $\frac{1}{2}$ sieve	2	6	3	6	Parley.....dos. bunches	4	0	6	8
Cabbage.....dos.	1	6	3	0	Parsnips.....dos.	0	9	1	0
Capoteams.....100	0	0	0	0	Peas.....quart	0	0	0	0
Carrots.....bunch	0	5	0	8	Potatoes.....bushel	2	6	4	0
Cauliflower.....dos.	2	0	6	0	Radishes doz. bunches	0	9	1	0
Celery.....bundle	1	0	2	0	Rhubarb.....bundle	0	9	1	6
Cucumbers.....each	1	6	3	0	Savoy.....dos.	1	0	2	6
Endive.....score	2	6	3	0	Sea-kale.....basket	1	6	3	0
Fennel.....bunch	0	3	0	0	Spinach.....sieve	3	0	5	0
Garlic and Shallots, lb.	0	8	0	0	Tomatoes..... $\frac{1}{2}$ sieve	0	0	0	0
Herbs.....bunch	0	3	0	0	Turnips.....bunch	0	3	0	6
Horseradish.....bundle	2	6	5	0	Vegetable Marrows doz.	0	0	0	0

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

AUBRIETIA DELTOIDEA (J. L.).—The Aubrietia very much resemble the Arabis, the Arabis deltoidea being properly Aubrietia deltoidea. Arabis purpurea is the same as Aubrietia purpurea. The Aubrietia deltoidea is the same as the little lilac Arabis.

RESTING GESNERAS (M. H.).—Gesneras should be brought to a state of rest after blooming by withholding water and placing them in a drier atmosphere. The usual period of rest is the first four months of the year if they bloom late, as yours have done. The last edition of the "Cottage Gardeners' Dictionary" is the seventh, published by H. G. Bohn, York Street, Covent Garden.

COTTAGE GARDENERS' DICTIONARY (E. M.).—We have no interest in the work. It belongs to Mr. Bohn. No supplement has been published.

SYRINGING VINES (Sarrum).—You are right in syringing the Vines, now breaking, every morning with water of the same temperature as that of the house. If the eyes of the young Vines are round and plump you may force them if they are in pots sufficiently large. If not already in pots 12 or 13 inches in diameter, pot them into such at once, and if you expect a crop of fruit next year do this without disturbing the ball. If not large enough to fruit another year pot them all the same, and cut down to two eyes; but if you fruit them they will not require pruning at the length they now are. You should have stated for what purpose they were grown, and then we could have been more explicit.

TRITONIA AUREA—SAFFRON CROCUS NOT BLOOMING (Idem).—Of course you will please yourself about the Tritonia aurea, and keep it secure from frost. It is an evergreen because you force it into growth. The most probable reason of your Saffron Crocuses not blooming is their having been taken up when they mostly flower, which would weaken the bulbs so much that they would not bloom in the following season. Had you planted them in spring instead of autumn it is more likely they would have bloomed in autumn. Once planted the roots should not be taken up in spring, but remain in the soil the whole season. They do not require any of the drying process.

HARDY FERNS FOR EXHIBITION (A Novice).—Lastrea Filix-mas cristata; Athyrium Filix-femina corymbiferum, A. Filix-femina depauperatum; Blechnum spicatum ramosum; Athyrium Filix-femina plumosum, A. Filix-femina apusiforme; Asplenium fontanum, A. trichomanes incisum, A. marinum ramosum; Struthiopteris germanica; Osmunda regalis; Polystichum angulare proliferum; Adiantum pedatum; Polypodium alpestre, P. vulgare cambricum; Lastrea Filix-mas depauperata; Scolopendrium vulgare, var. subcornutum, multifidum, submarginatum, ramosum, endivifolium; Polystichum angulare proliferum Wollaston; Asplenium Halleri; and Adiantum capillus-Veneris Moritzianum. You may grow all the foregoing in a frame deep enough, shaded in summer, and protected in winter from severe frost. "The Taxidermist" gives directions for stuffing birds.

PROVITS OF A VINERY.—I, as well as several of my neighbours, would feel extremely obliged to your correspondent "S. Ryder" if he would detail a few particulars respecting his vinery—viz., as to the time of cutting his Grapes, price per pound, &c., as we find great difficulty in disposing of any garden produce at all, being nearly 100 miles from London. As to any profit we never dream of it.—H. H., Leicester.—[Although the house mentioned by me at p. 512 is heated, it is the same apparatus that was put in when an orchard-house was contemplated. There is no forcing used; the Vines are allowed to break naturally, there being no fire used except to keep out the winter and early spring frosts, on account of the plants. The first Grapes were cut August 26th, and exhibited at the Botanic Gardens, Manchester; but the cutting for sale commenced October 14th, and the last were cut December 2nd. They were sold chiefly to Mr. Copland, Victoria Market, Manchester.—S. RYDER.]

GRUBS (J. C. C., Saffron Walden).—The grubs sent are the larvae of a very common two-winged fly—Bibio Marci, or an allied species. They are generally supposed to feed on decaying vegetable matter, but would probably attack the roots of Fancies, &c. It would be well to dose the soil with lime water.—W.

JERUSALEM ARTICHOKE HARD (Frank M.).—We should think if planted in fresh ground and well manured, that they would produce tubers the reverse of hard. They should have an open situation. We can only account for the tubers being as "hard as stones" through their being grown in poor soil under the shade of trees, or through some defect in the cooking. We never heard of the like before.

RIGHT TO TAKE AWAY MANURE (A Constant Reader, Campbelltown).—You can take away the dung used for making hotbeds, unless there was an agreement with your landlord that all manure made on the premises is to be employed on the land, and unless the Melon and Cucumber plants are growing now on the dung, for an out-going tenant has no right to destroy a growing crop.

FOUNTAIN AT DINORBEN.—We are informed that we are mistaken in supposing the fountain at page 514, to be a representation of the one at Dinorben House, as it is only the upper 12 feet of it adapted for, and called, the small Hebe fountain. It was made for the Exhibition of 1882, price about £80, and one like it for Sir Jamesjee Jejeebhoy; but the grand Hebe fountain, as it is at Tanbridge Wells, cost about £280.

MISTLETOE ON TREES (Druidus).—We know of no place where you can purchase trees with Mistletoe growing on them. It may be propagated from seed, and the best months for sowing it are February and March. Make two cuts in the shape of the letter V on the under side of the branch of an Apple tree; make the cuts quite down to the wood of the branch, raise the tongue of bark made by the cuts, but not so as to break it, and put underneath one or two seeds freshly squeezed from the Mistletoe berry, let the tongue back, and the process is completed. If the seed is good, the seedlings, not unlike Cucumber plants, soon appear. They remain attached to the branch, and do not seem to injure the tree. Open the bark underneath the branch to receive the seed, because it is thus preserved from an accumulation of rain water, and is shaded from the sun.

FLOWER-GARDEN PLAN (F. W. B., Weston-super-Mare).—We have no fault to find with your plan only that you are attempting too much in such a small space, and must use very low things for beds 2 feet across, and divided by walks 2 feet wide. We think that a plan with half the number of beds would suit better, and you have done this so well that we are sure you will do that well too. Your two circles, 5 feet in diameter, as two centres, are already large enough for the other beds, and raising them with stakes or otherwise will make them still more conspicuous, and so far down the other beds. If these two circles were 3 or 3½ feet in diameter, and raised at the sides 1 foot, and covered with small-leaved Ivy, and the other 18 inches added to the surrounding beds, the effect would be better. In either case they will form stand-points. Unless very steep, we have no fear of the bank if there is good soil beneath the turf. We should like to know the slope, the size of bank, &c., before recommending Deodars, Wellingtonias, &c. If you send a stamped envelope with your direction you can have the plan returned.

FUCHSIA CULTURE, &c. (Nash).—You can have "Florists' Flowers for the Many" free by post from our office if you send five postage stamps with your direction. It details the culture of the Fuchsia. Rose seed does not require to be sown in heat. Hardening-off is gradually lowering the temperature and giving air more freely to plants, to prepare them for enduring exposure to out-door growth.

PERRAS' BOILER (T.).—Our correspondent wishes to know from some one who has tried it whether the flue-pipe joint leaks, how it is cleaned, and how the outer or flow-pipe is jointed?

OUTVINDING FERNETALIS (A Constant Reader, Tunbridge).—You cannot do better than pursue the system adopted at Lady Dorothy Nevill's, at Dangstain. It is there grown in a tank, in which is a depth of 16 or 18 inches of water, which is occasionally flooded to remove the scum. The temperature of the water ranges from 60° to 65°, but that of the atmosphere of the stove is, of course, much higher. The pot should be submerged. The plant may also be grown very well in wide bell-glasses.

EARLY POTATOES AND PEAS (A Subscriber).—By out-door culture in the south of Ireland you ought to have them as early as in southern Cornwall. No varieties will come earlier than the true Walnut-leaved Kidney Potato. Of Peas, Dillistone's Early, Sangster's No. 1, and Early Ringwood, succeed each other in the order named; but to have a good succession of first-quality Peas we should grow Dillistone's Early, Sangster's No. 1, Champion of England, and Veitch's Perfection. Of Beans, Marshall's Dwarf Prolific is the earliest; and of Dwarf Kidney Beans, the Black Belgian if you can obtain it true.

NAMES OF FRUITS (John).—The Pear was quite rotten when it arrived, but appears to be Beurré d'Arenberg. No. 1 (Apple), Colonel Vaughan's; 2, Like Manx Codlin. (H. B. W.).—The Pear is Vicar of Winkfield, and the Apple Scarlet Nonpareil.

NAMES OF PLANTS (Flora).—*Dictamnus fraxinella*. We do not recognise the Fern by the name you mention. (X. X.).—*Pteris serrulata*, *Pteris tremula*. Not numbered. (H. B.).—1, *Cyrtomium falcatum*; 2, *Lastrea Sieboldii*; 3, *Adiantum reniforme*; 4, Insufficient. (J. C.).—*Lastrea Filix-mas*. (Alpha).—J, *Diplazium decussatum*; G, *Pteris hastata*; K, One of the forms of *Hypolepis tenuifolia*; H and S, *Pteris cretica albo-lineata*; C, *Asplenium bulbiferum* var.; B, *Doodia caudata*; A, Insufficient; F, *Goniophlebium appendiculatum*; D, *Allosorus crispus*; E, *Asplenium viviparum*. We cannot return specimens.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE DEPARTED YEAR.

THE old year with its joys, troubles, and experiences is passed away. Its successor now presides; and we have as usual to express our thankfulness that we have been spared to address our readers once more, to tell them of our success, to thank them for their support, and to offer them our good wishes.

The course of the poultry world has been smooth during the year 1864. The promises of 1863 have been kept. The new classes that were demanded have been well filled with entries; the love of the pursuit has been increasing; and we believe we may fairly and truthfully say that at no previous period have there been as many new exhibitors coming forward. The old shows are well supported when they are well managed. Entries are numerous, and the attendance good.

All great changes must be more or less progressive. When poultry first became a popular question, all that was asked for was a breed that would sell well at an exhibition or in a sale-room. No heed was paid to the food part of the subject, nor was the fitness of a breed either for a peculiar climate or purpose ever thought of. It is now different. When a new one is introduced, one of the first inquiries is, Is it a good table bird? The deviation of its popularity or its claim on the public favour will depend on its useful everyday qualities. This will be more clearly shown as we review the different breeds, and notice the position they hold or have held in the public estimation.

Dockings are nearly perfect in every way. They are large, handsome, heavy, and healthy. They form the most numerous class at all shows, they sell readily, and are evidently favourites with those who wish either for sale or consumption to produce the best quality of poultry. The old-established names are still in front, but they have new colleagues in the prize list. Lady Holmesdale and Captain Hornby are the first in this breed.

Spanish have made a large stride, and have certainly shown better in quality and condition than for several years past. If they keep on, the days of Messrs. Davies and Eake will be seen again in this beautiful breed. Mr. Jones has been at the head of the chickens at Birmingham and Manchester. The entries have been good, except in the hen and pullet classes, which do not fill as they should.

Cochin-Chinas keep on their steady way, and form, deservedly, a valuable addition to our shows. Captain Heaton has repeated his 1863 victories, and been the principal winner wherever he has shown. The quality of the birds has been excellent, and the above-mentioned victories have not been easy achievements; worthy competitors have been found everywhere. We can note little progress in the house and Partridge breeds; but we can speak most

highly of the advance in White; they have been excellent and numerous.

Brahma Pootras have outlived their detractors with few exceptions, and show, on all occasions, numerous pens of uniform plumage and great beauty. It is now well understood, and thoroughly believed, after trial, that few birds are so hardy or so profitable as these.

Malays seem limited to a small number of pens, and find but few admirers.

Crève-Cœurs have not been as numerously shown as we expected.

We can speak of Hamburgs as we have done for many years. They vary, and no improvement can ever be noted in all varieties at the same time. This year our highest praise will be for Golden-pencilled, Golden-spangled, and Black. The latter had separate classes at Birmingham, and filled them well, not only in numbers, but in quality. The Golden-pencilled and Spangled have been nearly perfect, but the Silvers have lost ground.

Game fowls are always beautiful, and this year has been no exception. Mr. Statter has been very successful. Many of the winners in the north have been of Mr. Archer's celebrated strain. At the large shows the various classes of this beautiful breed have formed an exhibition of themselves.

Bantams have marvellously increased in the Game classes, and they are birds of perfect beauty and symmetry. Blacks and Whites also increase, but the beautiful Sebrights seem at a standstill as to numbers.

Turkeys have hardly held their own in weight. The same may be said of Geese, with few exceptions. Rouen Ducks go ahead in weight and numbers. They are far more numerous than their Aylesbury competitors, and bid fair to be as heavy. Buenos Ayrean Ducks daily gain more admirers.

Shows are becoming more numerous in connection with agricultural meetings. In the north of England they are well established, and, though of frequent recurrence, they are well supported. They make little progress in the south and south-west. We cannot tell why poultry should be unpopular with the farmer, but it is so: and hence the fact that in a few months of the year we import many millions of eggs. An attempt has been made to get up a Metropolitan Show at the Agricultural Hall, but the time of year was unfavourable, and the attendance was bad. Birmingham thrives as ever. Entries are more numerous, so are sales; more visitors attend, and more money is taken.

The Poultry Club has given signs of life during the past twelve months, and if it be for the good of a pursuit in which we are much interested we heartily wish it success. We do not think it will conduce to such an end by censuring the management at Birmingham in the appointment of Judges. They have been the same for many years, and it has moved only from success to success.

This nearly brings us to a close. Our subject has been of peaceable times and doings. We are grateful for it. We are thankful our task involves nothing more—that with the end of the year, while we have grateful recollections of past pleasures and associations, we can hardly recollect a difference—certainly we have had none that will live in our remembrance. We tender our best thanks to many valuable and able contributors, especially for the kindly spirit in which their instructions are given. We admit our obligations to an increasing list of subscribers. We are thankful for the satisfaction which these things bring, grateful for the prosperity which results from them, and hopeful for the future. It is always a happiness to us that to the best of our ability we seek to give pleasure to all, and that it is our good fortune to be the means of diffusing knowledge that is not only useful but perfectly innocent.

Most heartily do we wish to all with whom we have in any way to do

A HAPPY NEW YEAR.

BRAHMA POOTRAS.

I must leave all impartial readers of "our Journal" to decide, whether in my late defence of the purity of the Brahma I used the word "hybrid" erroneously. The course was forced upon me. All who possess a copy of the beautiful "Poultry Book," I refer to the few words devoted

to Brahmas. They will there see that the word "hybrid" is used by "our Editor" in reference to the Brahma, closely following suggestions as to the probable crosses of Malay, Dorking, and Cochin which might make a Brahma. In these remarks the word "hybrid" has no reference to the Brahma being derived from a cross between a Pigeon and a Pheasant, or a Galena and a common hen, or any such cross of different genera, but to its production from various known breeds of fowls. I cannot see then, as I was quoting from the "Poultry Book," and arguing from its words that I was in error thus far.

I would bow to any ornithologist who had Brahmas and Cochins to decide upon, only I would place this before him—given a Buff, Partridge, Cinnamon, Black and White Cochin cock, and a Brahma cock—if they are the same breed, why is it that the Brahma cock differs from all the other varieties of Cochin in the form of the back, brows, and tail? I have read again all that the "Poultry Book," says about Brahmas, and I cannot find there any admission on the part of Dr. Bennett, as to the cross in the origin, and our experience of Yankeedom is not in favour of their truth, especially where money is to be made.

I may add further, that I hatched two chickens last year, the produce of a Brahma cock and Black Cochin hen, that one of these was a correctly marked Brahma cockerel with a single comb, the other a black hen with silvery hackle and pea-comb; that, I should say, these birds partook more of the Brahma than Cochin, and that if the Brahma is already partly Cochin, this result ought not to have been arrived at.

Another question arises out of this discussion. Are not all our known breeds of poultry more or less manufactured? If I am forced to say the Brahma is, my judgment would be that all are, and if so, Why this raid against the Brahma only? Why, if it is conceded to other breeds, that by their breeding true to feather, &c., they have established themselves, is it not also allowed to Brahmas? It savours somewhat of jealousy. The progress of the Brahma in public favour the last two or three years has been so rapidly upwards that we can read, that at Brighton the "great feature" of the Show was—Cochins? No! they only mustered for all varieties of colour eight pens! Dorkings? no, again! but Brahmas, which mustered twenty-eight pens against the small entry of Cochins!—Y. B. A. Z.

[There is no "jealousy" actuating us, we merely wish to arrive at the truth on all subjects within our province. Dr. Bennett's statement that the parents of the Brahma Pootra were a Cochin-China and a Chitagong is in a work published by himself. There is no force in the result of the cross between a Brahma Pootra and Cochin-China, for the same would happen and does happen often when other related varieties are crossed. It is quite probable that many of our breeds of poultry are mere varieties, the results of crossing, but the difficulty is to discover which are the original species. If the Brahma Pootra is a bird of superior merits, it will matter nothing that it is a variety of the Cochin-China.]

POULTRY-KEEPING FROM A COMMERCIAL POINT OF VIEW.

(Continued from page 520, Vol. VII.)

GENERAL RULES TO BE OBSERVED IN POULTRY BREEDING.

THE BREEDING-STOCK.

1st. The hens selected to breed from should be kept apart from the cock until they are at least twelve months old, and the cock should not be less than eighteen months old before he is put with hens, as a too early call on nature degenerates the breed.

2nd. Whatever races are selected they should be the most perfect specimens that can be obtained, as the first outlay will well repay itself.

3rd. That the distinct races be kept strictly separate, except where it is intended to obtain a cross breed, and for this the finest specimens of both races and sexes must be selected.

4th. Not more than six hens should be allotted to a cock.

5th. After the third breeding year it is advisable either to sell the stock or to fatten them for the market, as they become less prolific, and their progeny are apt to degenerate.

6th. The eggs should be collected at least three times

a-day, as when a fecundated egg has been sat upon for a few hours the germ very soon becomes developed, and the egg is afterwards unfit for hatching.

7th. The stock must be fed regularly at sunrise, and in the afternoon an hour before going to roost.

THE LAYING-STOCK.

1st. When it is intended to sell the eggs for consumption, it is advisable to pen hens up without a cock, to prevent the eggs being fecundated, as they will then keep fresh much longer. This system of keeping hens by themselves has another great advantage, as they will lay a great many more eggs during the year.

2nd. From twelve to eighteen hens can be kept together in a home as shown in *figs. 7 and 8*.

3rd. The eggs should be collected twice a-day.

4th. For feeding the same rule applies as above; and the reason for selecting sunrise and afternoon for feeding is, that it is before and after the laying time, during which the hens on their nest would receive no food.

THE CHICKENS.

1st. From the day they are hatched to the time when they begin to roost, not more than twelve chickens ought to be kept in one compartment, as they will huddle together, and the weak ones either be crushed or suffocated.

2nd. The place to which the young chickens retire ought to have a dry floor, and be kept scrupulously clean; and as the floor is the coldest part of a room, their roosting-box ought not to be more than 12 inches high, and the top to be slanting, which will keep the warm air in the roost. See *fig. 12*.

3rd. As soon as they begin to roost on perches they should be removed to the poultry-home—say about thirty to each home.

4th. When the cockerels can be distinguished from the pullets, they should be penned separately. From this stock the breeding and laying stock will be selected to replace old ones.

5th. The feeding of chickens ought to take place not less than three times a-day, and be of a liberal kind, with plenty of finely-chopped green vegetables, and an occasional supply from the vermin nursery, but no meat should be given.

6th. Occasionally a little flowers of sulphur and oxide of iron mixed with their food will keep them in good health. Sulphate of iron and lime water are likewise given with great advantage in their drink; this applies also to all kind of poultry.

THE LAYING OF EGGS

Takes place in the morning during the summer months, and gradually later in the day as winter approaches, until moulting time arrives, when the hens cease laying till they have their new feathers, or for about two months. Although a hen can only lay a certain number of eggs during her life, yet her laying may be stimulated by an appropriate diet (see "Food for Laying-fowls"), as also by a genial temperature kept up in the poultry-home. It has been satisfactorily proved, that under such circumstances a hen will lay at least thirty eggs more during the winter months, a time when they are most valuable, both for artificial hatching and consumption; and taking an establishment with two thousand laying, and one thousand breeding-hens, the extra profit will be as follows:—

EXTRA REVENUE.

3000 Hens at 30 extra eggs = 90,000; at 15s. per 100 £675 0 0

EXTRA EXPENSES.

Fuel, wear and tear, during four months 50 0 0

Or a nett extra profit of 625 0 0*

to be ascribed solely to a warm temperature and appropriate diet. But this is not the only advantage derived from a genial temperature during the winter months—it may save, perhaps, hundreds of pounds in the loss of poultry, from diseases caused by exposure to damp and cold.

Just as the laying can be forced by artificial means, so can it also be retarded. When it is intended to keep some

* We must warn our readers against our correspondent's profit and loss calculations. He makes no allowance for deaths, and other large deductions. Etc.



Fig. 12.—Section of roosting-place for young chickens.

hens for laying during the time that others are moulting, which generally begins in September, it is only necessary to pull out the feathers of such hens, and thus produce an artificial moulting about two months sooner—say early in July, when they will cease laying until their feathers have grown again.

THE OVARIUM.

It has been ascertained that the ovary of a fowl is composed of six hundred ova or eggs; therefore, a hen during the whole of her life cannot possibly lay more eggs than six hundred, and which in a natural course are distributed over nine years in the following proportions:—

	Eggs.		Eggs.
First year after hatching	15 to 20	Sixth year after hatching	50 to 60
Second ditto	100 to 120	Seventh ditto	35 to 40
Third ditto	120 to 135	Eighth ditto	15 to 20
Fourth ditto	100 to 110	Ninth ditto	1 to 10
Fifth ditto	60 to 85		

It follows that it would not be profitable to keep hens after their fourth year, as their produce would not pay for their keep except when they are of a valuable and scarce breed.

PRESERVATION OF EGGS.

Much has been written about the preservation of eggs, and many are the suggestions that have been made, but none have as yet given satisfaction, and for the sole reason that the structure of the egg is not considered in relation to the physical and chemical laws which govern evaporation, permeation, and putrefaction. The shell of the egg being porous to admit air to the chicken during the process of incubation, allows also part of the liquid to evaporate, and the air to penetrate, when the eggs are not used soon after being laid; and the air acting on the animal matter produces early decomposition and putrefaction, particularly in fecundated eggs, in which the germ is first decomposed, clear eggs, the produce of hens which have not been with a cock, keeping fresh much longer. This can be easily exemplified by putting an old fecundated egg, and an old clear egg under a hen when sitting, and it will be found that after the twenty-first day the fecundated egg is putrid, and the clear still fit for use.

To exclude the air from the egg, and to prevent the evaporation of its liquid, it has been proposed by some writers to pack the eggs in salt, lime, bran, sawdust, &c., by others to keep them immersed in lime water, in salt water, or both combined. Others, again, suggest to varnish or oil the eggs, and some even to parboil them.

There can be no doubt that were the object in view solely to preserve the eggs from becoming putrid, some of these suggestions might be employed with advantage; but there is more required than simply to preserve the eggs from putrefaction; for instance, for kitchen use, and the breakfast-table, eggs ought not only to be preserved fresh, but also free from any foreign flavour, such as lime, salt, bran, sawdust, varnish, and oil, must unavoidably impart to the egg through its porous shell; and as for breeding from such preserved eggs it is out of the question. Whoever has seen any chickens hatched from salted or mouldy eggs, or from such as have been varnished or oiled? which latter process stops up the pores through which the air so indispensable to the formation and development of the chicken must be admitted.

Now, the most effective, simple, and economical plan for truly preserving eggs, and without imparting to them any foreign flavour, or rendering them unfit for hatching purposes, is to use the patent stoppered glass jars with vulcanised india-rubber joints (see fig. 13), and proceed thus—Immediately after collecting the eggs put the jar in hot water, and when thoroughly warm so as to rarify the air, place the eggs in the jar, the pointed end uppermost, and pack and line with paper shavings, or cocoa-nut fibre, to prevent them from breaking, then close the jar before taking it out of the water, and it will be found that eggs preserved by this method will be fit for hatching twelve months after, and that those intended for the breakfast-table will be as fresh as on the day they were laid.—G. K. GYEELIN, Civil Engineer, London.

(To be continued.)

HECKMONDWIKE POULTRY SOCIETY'S SHOW.

THE annual meeting of the above Society was held on the 26th ult., at the Wool Pack Inn, in a large room recently built for public use. The day being frosty and clear, and a holiday, the number of visitors was larger than at any previous exhibition. This being a kind of mutual help society, the object of exhibitors is not so much to obtain large money prizes, as to ascertain the comparative merits of the fowls exhibited, the best of which often change owners, and again appear in different hands the next time they are exhibited. This year several pens were sold, and at the close of the Show were forwarded to their new owners in distant parts of the kingdom. The prices obtained were in most cases good, a Cochin Bantam fetched £7 10s. The number of pens was larger than last year, and with the exception of Class 17, Game hen of any colour, each pen contained a single cock bird.

The Game classes were well filled, fully one-half of the pens were occupied by them. In the Black-breasted and Brown Red classes, the Judges found it no easy matter to decide which should take the prizes. The highly commended birds were truly excellent. The Duckwings were a superior class, and in excellent feather. In the Game Bantam classes the birds were first-class, and at the close of the day we found that several pens had changed owners. The Blacks were fine specimens, such as it is no easy matter to beat. Some good Whites were shown, but this district is too smoky for them to look clean. The Spanish class contained some excellent birds, but the entries were few. We were disappointed in the Hamburg classes; as these have here always been called "the cottager's fowl," we expected to find the entries in greater numbers. Cochin and Brahmas Pootra entries were few, but the birds were good. The class for Game Hens of any colour was a most interesting one, the prize-takers nobly won their honours.

GAME COCKS (Black-breasted Red).—First, R. Hemingway, Shelf. Second, J. Firth, Halifax. Highly Commended, G. Helliwell, Sheffield; A. Hodgson, Ilkington. Commended, B. Naylor, Heckmondwike; J. Joy, Liversedge Hall.

GAME COCKS (Brown Red).—First, H. C. Mason, Drighlington. Second, J. Firth, Adwalton. Highly Commended, G. Helliwell, Sheffield; J. Riley, Chickenley. Commended, G. Noble, Staincliffe; J. Brook, Gomersal. COCKS (Duckwings and other Grey and Blue).—First, W. Whitesley, Liversedge. Second, J. Fell, Adwalton. Highly Commended, G. Hartley, Gomersal; J. Riley, Chickenley. Commended, J. Alderson, Halifax; W. Bentley, Seales.

COCKS (White and Pile).—First, T. J. Sunderland, Coley Hall. Second, H. C. Mason, Drighlington.

COCKS (Black and Brassy-winged).—First, J. Vickerman, Chickenley. Second, J. Brook, Gomersal. Highly Commended, G. Helliwell, Sheffield. Commended, G. Noble, Staincliffe.

BANTAM COCK (Red Game).—First, G. Noble, Staincliffe. Second, J. Fell, Adwalton. Highly Commended, J. Elton, Heckmondwike. Commended, J. Firth, Halifax; G. Helliwell, Sheffield.

BANTAM COCKS (Duckwing Game).—First, H. Oldroyd, Heckmondwike. Second, E. Wright, Staincliffe. Highly Commended, C. Smithson, Heckmondwike. Commended, G. Helliwell, Sheffield.

BANTAMS (Black).—First, T. P. Preston, Heckmondwike. Second, H. Oldroyd, Heckmondwike. Highly Commended, J. Brooke, Heckmondwike. BANTAMS (White).—First, G. Helliwell, Sheffield. Second, H. Oldroyd, Heckmondwike. Highly Commended, G. Preston, Heckmondwike.

SPANISH (Black).—First, J. Beaumont, Dewsbury. Second, J. Vickerman, Chickenley. Highly Commended, J. Oldroyd, Dewsbury Moor.

HAMBURG (Spangled).—Prize, G. Helliwell, Sheffield.

HAMBURG (Pencil).—First and Second, S. Smith, Northorham.

COCHIN-CHINA (Any colour).—First, G. Helliwell, Sheffield. Second, C. Lister, Mirfield.

BRAMMA POOTRA COCKS.—First, C. Lister, Mirfield. Second, A. Tattersfield, Heckmondwike.

ANY OTHER DISTINCT BREED.—First, C. Lister, Mirfield (Sultans). Second, G. Noble, Staincliffe (Cochin Bantams). Highly Commended, S. Halliday, Heckmondwike. Commended, W. Leadbetter, Mirfield.

GAME HEN (Any colour).—First, H. C. Mason, Drighlington. Second, G. Noble, Staincliffe. Highly Commended, G. Helliwell, Sheffield; T. Atkinson, Heckmondwike. Commended, A. Tattersfield, Heckmondwike; A. J. Sunderland, Coley Hall; J. Harrison, Holbeck.

The Judges were Mr. J. W. Thompson, Southorham; and Mr. Enoch Hutton, Pudsey.

BRAHMAS.

ALTHOUGH we have heard lately of the funeral rites, &c., as connected with this "mongrel lot," although the attorney-general, and we presume his client, are both gone to the tomb of all the Capulets like weeds, I suppose these "mongrels" are very difficult to eradicate. I refer my reverse "Z. A. B. Y." to the Brighton Show. There Dorkings—



Fig. 13.

Dorkings do I write? aye Dorkings in a southern county, the fowl, *par excellence*, for the south, &c.—had two classes, and 212 offered. They mustered 35 pens.

The "cross-breeds" had 23 10s. offered, and they mustered only 28 pens! Do we need any further facts, that in a "southern" county these "mongrels" ought to remain unnoticed? Why do persons keep such wretched birds? Strange, no other breed came near this unpopular fowl as a payer to the show, and in the prize list eleven pens were mentioned in one class, and six in two classes of Dorkings!

The coffin does not appear to have been strong enough!—Y. B. A. Z.

THE Brighton Poultry Show has afforded another, and, I trust, a conclusive proof of the growing popularity of the Brahmas, and of the especial esteem in which they are held in the south of England. It also proves conclusively the necessity for dividing the Brahma class at any first-rate show, as has been already done at Islington and Manchester. The following are the numbers in each class:—

Brahmas.....	28	Silver Hamburgs	11
Coloured Dorking Chickens ...	22	Cochins	8
Bantams	17	Spanish Chickens.....	8
Coloured Dorkings	13	Dorking Cockerels	7
Any variety	13	Spanish	6
Game	13	Pollish	6
Game Chickens.....	11	Game Cocks	3
Gold Hamburgs.....	11		

It will be seen that the Brahma class was the largest in the Show, beating the Dorking chickens by six, the Bantams by eleven pens, and more than doubling any other class. As to quality, it is sufficient to say, that eleven pens of Brahmas were noticed by the Judge, being treble the average number noticed in the other classes.—BRAHMA FOOTRA.

A NEW CHAPTER IN THE NATURAL HISTORY OF THE BEE.

BEE COMMOTIONS AND QUEEN ENCASUREMENTS.

THIS is a new chapter in apianian science, and future historians who would take up the pen to write a systematic and comprehensive treatise on the honey bee must, if their knowledge is not behind the age in which they live, devote a whole chapter to the consideration of the very interesting and novel subject—bee commotions and queen encasements.

The manuscript which forms the substance of a portion of the following article has lain aside in my repositories for several years, and was not, therefore, originally intended for THE JOURNAL OF HORTICULTURE. The peculiar and hitherto mysterious facts to which it makes reference are of such a character that I confess I felt somewhat unwilling publicly to hazard a theory regarding phenomena which further investigation and a more enlarged experience might possibly cause me to alter or abandon. Moreover, at the period referred to, the subject itself had apparently escaped the attention of both the naturalist and practical bee-keeper—no British author, to my knowledge, having taken any notice of it, and no apianian I ever met having made it a matter of study or investigation. I believed I had made a discovery of a very peculiar character—a discovery of certain strange phenomena occasionally occurring in the apiary in regard to which the queen occupied a prominent part, and which were evidently caused by something affecting her circumstances or condition. In this Journal I have more than once hinted at the subject, and in the concluding paragraph of an article written by me in No. 95 (20th of January, 1863), I stated that in investigating the curious phenomena in question I had bestowed considerable attention and thought, and though I could not say that I had been able to unravel entirely the true solution, yet if ever induced to take up pen to endeavour to cut this Gordian knot, to unravel this physical mystery, I should describe the subject of my essay to be "A New Chapter in the Natural History of the Bee."

While now, therefore, taking up my pen in fulfilment of this promise to narrate the results of my experience on this interesting subject, I have thought it better to preserve, as I have already said, a portion of the original manuscript, altered only if for no other purpose than to show the changes

which my own views have undergone in the course of my investigations: these extend over a period of some eight or ten years. It is with diffidence I confess that, even now, I attempt a solution; for I know* that the subject in some of its aspects has not only been brought before the readers of this Journal in 1862 by that indefatigable and minute apianian observer Mr. Woodbury, but has also I notice been a theme of controversy among the leading apianians in Germany.

Few naturalists or bee historians seem to take any notice at all of what I choose to designate "bee commotions and queen encasements," or if they do, it is only in an incidental manner, and in reference exclusively to such commotions as follow the loss of a queen. There are other commotions, however, which take place in the apiary, and which the observant cultivator will not fail to notice, although he may not consider them of sufficient importance thoroughly to investigate and explore. My attention was early directed to the consideration of these, but for a long time I was at a loss to account for them; they appeared to me a perfect enigma, and wrapped up in profound mystery.

To such as are not well versed in the habits of the bee I may explain that there are three kinds of commotion which may occur in a hive, and which differ from each other in some essential particulars. It is only the intelligent observer, however, that can discriminate between them. The one which is most palpable is that which takes place under the following circumstances. Suppose the queen to be removed from a swarm newly hived, what takes place? The bees very soon thereafter on becoming aware of the loss get agitated, run about in all directions throughout the hive, explore every corner in quest of her. The agitation increases as the knowledge of the loss extends itself among the masses. The bees rush furiously out and in at the entrance, flying about in all directions, until, despairing of finding out their lost sovereign, they desert the hive in a body, and after filling the air in wild confusion return to the parent hive from which they had primarily issued. The origin of this commotion is quite manifest to the merest tyro in bee-knowledge.

Another kind of commotion occurs from a like cause, the loss of the queen, but under different circumstances and conditions, and the commotion among the bees will consequently manifest itself in another form. Suppose you remove the queen in the summer months from a healthy stock hive containing eggs and brood in all stages, what follows? In a short time—in less than half an hour, perhaps—manifestations of the loss will be observable. The bees will become agitated; the younger bees, especially, will be seen running out and in at the entrance, restless, and searching all over the hive in quest of their missing sovereign. The commotion in this case, however, is partial only and alight when compared with the former case, and its character will be more or less influenced by the condition and circumstances of the hive for the time being. In such a case as the one now supposed the commotion generally subsides in a short time, indeed, it is sometimes so slight as often to attract little notice, even by the more observant; for, with the exception of the younger bees occasionally afterwards displaying signs of agitation and restlessness, the industry and work of the hive are otherwise unimpeded, and all will apparently go on as before. The difference in the character of the commotions in these two cases lies in this—that in the latter there are in the hive materials out of which the bees can repair the loss they have sustained, and rear for themselves a new and youthful successor, which in due time will exercise all the functions, and discharge all the requirements of queen and mother. If such materials, however, be not present in the hive in the case supposed; if, for instance, the queen die during winter or early spring, or late in autumn when no such eggs or brood exist, then so soon as the bees become cognisant of the loss the commotion will assume a more aggravated form, and be more tumultuous in its character. Great excitement will prevail throughout the entire hive, which extends sometimes over several days, during which period I have often witnessed partial

* In May, 1863, Mr. Woodbury wrote me "I wish you would take up your pen and endeavour to unravel this mystery, which is a complete puzzle to me." The Numbers containing notices both from his pen and "Investigator's" were kindly sent me by the Editors for perusal.

and almost entire desertions take place. Moreover I have noticed when the loss of a queen occurred during winter or cold spring that the commotion indicating the loss did not occur immediately after the event, but often weeks after it. The first fine mild day afterwards will generally be that on which the commotion will show itself. Of course, when the loss of a queen takes place in such circumstances, desertion or a dwindling away necessarily follows, and the hive perishes.

But there remains to be considered another class of commotions differing essentially from either of those described, and to the consideration of which this article has chief reference.

From a very early period in my study of the history and habits of the bee my attention was drawn, as I have before stated, to the theory of commotions. I had frequently observed their occurrence in my apiary at certain seasons of the year, in spring and autumn particularly, and no season passed over without revealing to me some form or aspect of these curious phenomena.

The general characteristics of these commotions are somewhat identical to the second modified class already described; but, as in these, the agitation is not so widespread, but is confined, frequently at least, to a comparatively small number, and among these the younger bees always appear the most conspicuous. But what distinguishes this class of commotions from all others is the peculiarly strange and fluttering noise which may be distinctly heard in the interior—a noise so peculiar as unmistakeably to point out and indicate to me the true nature of the case, and prove without any further evidence the real state of matters within. On such occasions I have noticed the bees fly about as if examining, or wishing to gain access to, other hives, and so very agitated and excited do some of them become that I have observed them recklessly dash out of the hive, even after twilight, and lose themselves in the darkness of the night. In such cases I have had to close the entrance to prevent loss of bees till morning, when quiet was generally restored.

The first opinion I entertained in my early experience regarding these strange commotions was that they always indicated the loss of the queen; but this view I was obliged to abandon, from the simple fact that the hives in which they occurred did not often perish, as they would probably do at certain seasons of the year in such an event, but generally quieted down and recovered, though sometimes slowly, strength and activity.

In 1856 I began to investigate these commotions minutely, and took notes in my journal accordingly of all cases occurring in my apiary with a view to a solution.

The first recorded by me, therefore, is under the date of the 7th of March, 1856. On this date I observed No. 5, straw hive, one of the strongest in my apiary, in a state of commotion. The bees, especially the younger ones, were running about in a confused manner, taking wing, and apparently deserting into other hives. I turned up the hives, and found the bees in a turmoil searching all over the interior. I could see, however, no trace of a dead queen. In the evening, on listening at the entrance, a doleful fluttering noise was heard within, and the bees, though quieting down at intervals, yet again and again renewed the excitement till late, when several rushed out, and lost themselves in the dark. I accordingly shut the hive up till morning, when I intended to give it the queen of a hive whose numbers were now so reduced as to render its recovery very doubtful. This I did on the supposition that the queen had been lost. I introduced the queen first at the entrance for ten minutes; I turned up the hive to see how things were doing, when I found the queen surrounded by two or three dozen bees, which had hedged her in so closely that I feared she might be suffocated. In endeavouring to disperse the cluster I found the queen was held a complete prisoner. The bees stuck to her like leeches all round, holding her by the legs, wings, &c., and attempting apparently to sting her. I succeeded in extricating her, and shortly afterwards introduced her at the opening at the top of the hive. Here her presence acted like magic, the bees became perfectly furious, attacking her with the greatest ferocity, while others pursued her as she descended among the combs, apparently with the most hostile intentions. Next day the hive quieted down, and some days after I found a dead queen extruded. Although I could not determine whether this queen was the

one I had introduced to the hive or not, this is of little moment as the future history of the hive demonstrated that a queen was retained, proving that the commotion arose not from the want of a queen, as I at first supposed, but from some other cause not yet determined. The age of this queen was unknown, but she had been in my possession for two years.

The next case I noticed occurred on the 8th of December, 1856. I observed hive No. 3 in great commotion, the bees running to and fro in great excitement, and several flying off even after dark, and losing themselves. I shut the hive up to prevent loss of bees, and quiet was restored by the following morning. On the 29th of April, 1857, I find the following remarks in my journal in reference to this hive:—"Notwithstanding the commotion in No. 3 on the 8th of December last, and my fears as to the loss of its queen, this hive shows numbers of young bees, and works as actively as any in my apiary." This queen was reared in 1854, and, consequently, was between two and three years old.

Cases of a similar character occurred in my apiary on the 7th of April and 8th of December, 1857. The commotions exhibited were of the same character, and though no bad results immediately followed these, yet the after-history of both the hives in which they occurred was far from being satisfactory. Neither became populous in season, and I now began to view commotions in general as omens of present or impending evil, and, consequently, as unwelcome phenomena in the apiary.

On a commotion occurring in a hive on the 13th of October, 1858, I took a queen out of a unicomb hive, and introduced her to the bees to see how they would receive her. They immediately attacked and encased her. On my releasing the queen I think a bee had stung her. I then restored the hapless queen to her own hive again; but now her own subjects became excited, and surrounded her, from what motives it were difficult to say, whether on account of her having undergone some apparent change by virtue of the encasement itself, or, more probably, from the fact of her being wounded. Certainly I have noticed on several occasions injured bees—such, for instance, as had their wings singed off by a lighted candle—become the objects of a reckless attack by their comrades, and fall victims to their fury. I ascribed this, however, to what I would call an irritable inadvertence. Mr. Woodbury, I think, narrated a similar instance to the above in his experience, where a queen, after having been encased in a strange hive, and evidently, I think, wounded, was, on again being restored to her own bees, surrounded, and next morning extruded dead.

Having satisfied myself, therefore, that these strange phenomena which manifested themselves from time to time in the apiary had generally nothing to do with the queen, another view of the matter presented itself to my mind, and which might, I thought, lead to a solution of this curious problem. I had observed that in the course of some operations which I was in the habit sometimes of performing in my apiary—such as driving the bees for experimental purposes, changing the site of a hive, or such like—a number of the bees in such circumstances generally found their way into neighbouring or contiguous hives, and created by their entry some confusion and disorder; and it may be remarked that in cases of this kind the bees so entering are not always treated with hostility as are robber bees or entrants under other circumstances, but, on the contrary, their accession is often received joyfully, and a complete fraternisation takes place. Still the bees so entering naturally find themselves, to use a common but applicable phrase, "in the wrong box," and before they are reconciled to the change they will exhibit a restless and agitated appearance, which, however, disappears on the bees failing to discover the whereabouts of their former comrades. This view seemed at first sight plausible enough, and the following incident which occurred in my apiary seemed rather to strengthen it.

It so happened that after performing an operation on one of my hives a commotion on a small scale took place in a Huber-hive adjacent. The circumstance of the commotion occurring in such a hive was fortunate. A favourable opportunity was here presented to me of ascertaining how matters really stood in the interior. I immediately opened up every leaf or division of the hive, and examined each *seriatim*. I found the bees running over the combs in an agitated state, but could see no queen. My first impression was that the

queen was really amissing, but on searching more minutely I discovered a small knot of bees densely crowded together. In the centre of this cluster I found the queen, apparently held a fast prisoner; so closely packed were the bees around her that it was with the greatest difficulty I could get them disentangled from each other and from the queen, which they adhered to most tenaciously. With a small twig I forced the reluctant bees to quit their hold, and set the queen at liberty. She moved off among the combs, and the hive immediately afterwards assumed its usual quiescent state. I greatly rejoiced at this discovery, and I imagined that the mystery of commotions was now solved. I thought that if the queen was thus surrounded and held a captive by foreign or stranger bees, the agitation got up in the hive was very natural, and what might in the circumstances be expected. But the question arose, Were the bees clustering around the queen really her foes? Might they not be her friends? What object had the bees in so surrounding her? Were they hostile to her, or otherwise? Is she really seized and held captive by a few stranger bees which may have accidentally found their way into the hive, and caused all this disturbance? or is the cluster composed of her own subjects gathered around her on some other grounds, and from other motives than hostility? On reconsidering this case, and comparing it with other instances of commotion, I was far from being convinced that the entrance of strange bees produced on all occasions the phenomena witnessed. Moreover, there was something in the circumstances of this hive, and the history of its queen which made me pause before coming to a hasty conclusion on the matter, and though I left it over at that time for further consideration and reflection, I could not help entertaining the notion that the age of that queen might have had something to do with the curious phenomena exhibited, and might afford after all a truer solution of the theory of commotions than the entrance of foreign bees.

On a consideration, therefore, of the whole facts and circumstances connected with the history of commotions, so far as my knowledge then went, I came to the conclusion they were in most part based on the superannuation, debility, and incapacity of the queen. When the functions of mother begin to be impaired through increasing age and infirmity, when she ceases to be productive or prolific, it is then, I thought, that the bees instinctively get alarmed for the safety of the hive. The queen moves languidly over the combs; few eggs are deposited. She is attended still by a few bees that seem anxious to prompt her to the office of mother; but as the brood becomes scanty, and the population goes down, as the queen becomes weaker and weaker, until ultimately she can with difficulty hold by the combs, the bees begin to gather around her with anxiety—perhaps to vivify, if possible, her sinking frame; but nothing can impart vigour to the feebleness of age! She remains inert and languid, the bees gradually cluster around her, and with that loyalty and affection so peculiar to them. The queen being thus enmeshed in a knot of her interested and devoted subjects, and isolated from the presence of the general mass, these get alarmed for her safety, and thus the theory of commotions might, I thought, be satisfactorily explained. The question arises in such a case, Why do the bees not avail themselves of the power bestowed upon them by Nature, and provide themselves timeously with a successor? This is often done, as already illustrated by me in this Journal (September 16th, 1882, No. 77), where I have recorded a beautiful instance of the instinctive foresight in the bee in thus timeously providing against such an impending loss. But though in summer or in suitable seasons this may often occur, yet when the queen gives way, as is often the case in early spring or in autumn, the risk is great of the hive perishing, as the circumstances and conditions of the colony are not then favourable to queen-rearing, and hence a great number of hives perish at these seasons of the year.—J. LOWE.

(To be continued.)

STRAW BEE-HIVES.

A CORRESPONDENT of the *Dollar Newspaper* (American), has set forth the advantages of straw bee-hives:—
Straw as a material for bee-hives seems to have been

formerly in much more general use than at present. Bees then seemed to prosper with little or no care on the part of the owner; indeed, many, deterred by superstitious notions, never presumed to invert a stock even for examination, but allowed it to take its chance nearly or quite as undisturbed as if buried in the depths of the forest. How bees could thus subsist, swarming and multiplying their numbers in defiance of the external foes and internal tendencies to disease with which they have ever to contend, I presume may be explained in part, at least, by attributing their prosperity to the straw hive thus employed.

Waiving this question, however, for the present, it is acknowledged, I believe, by the leading apianians of the country, that if straw could be advantageously applied, no other available material would surpass it. Says the Rev. L. L. Langstroth, on page 331 of his "Hive and Honey Bee":—"Straw hives have been used for ages, and are warm in winter and cool in summer. The difficulty in making them take and retain the proper shape for improved bee-keeping is an insupportable objection to their use." Mr. M. Quinby gives his experience as follows:—"A few years since, in connection with a partner, I purchased twenty-two straw hives. These, with forty made of wood, equally as good in respect to the number of bees and stores, were placed in one yard. As the swarming season approached, the straw hives indicated the strongest colonies. The first five swarms were from these hives; and when seventeen had issued, thirteen had come from them. All sent out swarms but two or three, while fully one-third of the wood hives failed to swarm at all through the season. Here was an advantage in swarming, greatly in favour of straw hives. We kept some of these hives several years, which continued to maintain, in this respect, their superiority. Since our trial of them I have inquired of many who have had them in use, and all testify to their early swarming. I think it would be safe to give eight or ten days at least as the average time that these will swarm before others."

The superior value of early swarms will not be questioned. As swarming generally takes place in the height of the honey harvest, when a strong colony will often collect 3 lbs. per day, it follows that a gain of ten days in time is equivalent to 25 lbs. or 30 lbs. of honey, which is again virtually equivalent to nearly as much in the surplus-boxes to be put on after the hive is filled.

OUR LETTER BOX.

ESTIMATE OF POULTRY-HOUSE (*Asquith*).—The best made for you to proceed will be to ask of one or two builders what they would build such a structure for. No professional architect would give an estimate without examining the locality.

SPANISH FOWLS (*Black Spanish*).—They require little run, and do well in confinement, laying freely. No fowls will, however, do well on a brick floor. You must remove it, and substitute good hard beaten earth. The run in front must be provided with bricklayers' rubbish, gravel, grass, and earth, the lighter the better. Spanish do not sit. If they did, the space you name is not large enough to rear chickens. Dust and any kind of light dry earth would be far better than hay. They require a dust bath daily.

FATTENING DORCHINGS (*T. Castles*).—We advise you to buy Mr. Bally's book on fowls. It can be had at our office price, including postage, 2s. 3d. Fowls whilst fattening should have little or no room, and not much light. They should be kept quite clean and fed three times per day. Only as much at each meal as they will eat up clean. Ground oats mixed with new milk is the best food. They should fatten in a fortnight or, at most, three weeks.

SATINETTE PIGEONS (*J. Devonshire*).—We believe Mr. H. Noye is the same as the Mr. Noye who has advertised in this Journal.

ARTIFICIAL SWARMS—STRAW HIVES—FEEDING (*A Novice*).—All the instructions you require for making artificial swarms were given by Mr. Woodbury in No. 161. We do not think it advisable to paint straw hives, which should be carefully protected from the weather by sufficient external coverings. A clamped platform of any convenient size may be readily fixed on the top of a bell-shaped straw-hive by means of common mortar toughened by the addition of a little cowdung. If three or four wood screws are inserted on the underneath side of the platform, and left with their heads projecting about half an inch, they will become imbedded in the mortar, and, in conjunction with the uneven surface of the hive itself, will keep all firm. The hole in the centre of the platform should be 3 or 4 inches in diameter, and a corresponding hole may be readily cut in the hive itself, by means of a sharp pen-knife, as soon as the mortar is set. Feeding bees always excites their appetite for more; but we never noticed that the admiration of barley-sugar caused them to seek water with especial avidity. The barley-sugar barriole was suggested by Mr. Taylor many years before "The Times' Bee-master" was heard of, but we have never tried it ourselves. We should deem the weight of your stocks perfectly satisfactory. Asper is certainly not of primary importance. Condensed moisture at the hive's mouth is the usual indication of a thriving and populous colony. There is no doubt as to the preference manifested by bees for simple syrup over the saccharine solutions advocated by most of the writers of bee-books.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JANUARY 10—16, 1885.	Average Temperature near London.			Rain in last 38 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
10	Tu	Linnæus died, 1778, aged 71.	41.7	30.5	36.1	17	5 af 8	11 af 4	21 3	22 6	13	m. s.	10
11	W	Sir Hans Sloane died, 1753, aged 93	41.5	30.6	36.0	19	5 8	12 4	22 4	8 7	O	8 20	11
12	Th	John Ray died, 1705, aged 77.	42.4	30.7	36.5	16	4 8	13 4	24 5	45 7	15	8 44	12
13	F	Blackbird sing.	43.0	32.1	37.5	14	3 8	15 4	31 6	15 8	16	9 6	13
14	S	Purple flowers.	42.0	29.6	34.8	16	3 8	16 4	36 7	41 8	17	9 28	14
15	Sun	3 SUNDAY AFTER EPIPHANY.	41.5	28.9	35.2	12	2 8	18 4	40 8	5 9	18	9 49	15
16	M	Crocus flowers.	41.7	31.6	36.2	19	1 8	20 4	43 9	28 9	19	10 10	16

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 42.0°, and its night temperature 30.4°. The greatest heat was 56° on the 14th, 1849; and 15th, 1851 and 1852; and the lowest cold, 4°, on the 14th, 1858. The greatest fall of rain was 0.80 inch.

HARDY FERNS:

HOW I COLLECTED AND CULTIVATED THEM.—No. 7.



NE of the greatest difficulties in Fern-hunting is the not knowing what you are looking for, or where you are to find it.

I had never seen *Hymenophyllum unilaterale*, or tun-

bridgense, when I set off one morning to search for it somewhere in the torrent bed of the West Lyn, as it takes its way amidst rock and forest tree, under Lyn Cliff to the sea at Lynmouth. Able-bodied must they be who venture on the like errand; able to contend with a down-hill rush from Lynton, and an up-hill scramble amidst moss-covered rock and leaping waters; now steadying oneself with a branch of an overhanging tree, through which the sunshine gleams; now warily stepping over fissures and chasms, with the river bubbling beneath. And then the grand discoveries and the failures! The learned way in which one strives to palm off some pretty moss upon oneself as the veritable Tunbridgense, or at the very least Wilsoni, with the pleasant and extremely logical argument of "Filmy Ferns are moss-like plants—this is a moss-like plant: therefore this is a *Hymenophyllum*." And then the false argument leading to the true conclusion, for at last in my hand is a large mass of moss-like plants, and lo! it is *Hymenophyllum Wilsoni*: and why is it not tunbridgense? I have found some of these Filmy Ferns much finer than others, and I call the finest Tunbridgense; but I am afraid that in reality I have only found the unilaterale, and when I have found it I am obliged to own I have never kept it alive for any time. I have planted it on a brick in a running stream, but a rush of water washed it off; I have tried it in a flower-pot with a glass over it, but a little inattention or a visit, and I found it damped off. Still it is worth hunting for, if only to see it at home sporting with Naiades and Dryades. It seems a graceless thing to take it away to pine and die, either in solitude, or with companions uncongenial to it. I always feel loth to tear the little Fern from the rock it so prettily adorns; there is something sad in the look of the bare uncomplaining stone when the companion that gave it all its beauty and its life is gone.

I was once walking in the country with one who spared himself but little recreation from a life of toil in London—not literary toil only, for the gamins of the London streets were gathered into schools and taught by him. It was spring time, and the lanes were sweet with the breath of flowers. By-and-by I spied a Primrose root, and as I was about gathering the flowers my

friend said, "Nay, leave them alone, they look so home-like; they did not choose that quiet corner, and deck it out so daintily for you to destroy their labours in a moment. Let it live." Nature, to the toil-worn London man, was a living, breathing Presence; he drank with a thirsty grateful heart at the fountain of her beauty; but he would fain have left the waters undisturbed for the enjoyment of others. Yet we, who boast ourselves such lovers of Nature, are often at best only destroyers.

Lynton and Lynmouth abound in natural charms of a wild and strange character. The "Valley of Rocks" brings to mind a shadow-like memory of the pass of Glencoe, although the "Chimney" and "Castle Rock," "Rugged Jack" and the "Devil's Cheesewring," never rise into the solitary grandeur which leaves Glencoe unsurpassed by any other scene in Britain.

I was not very successful in my Fern hunts in North Devon. I found a small plant of *Adiantum capillus-Veneris* at Combe Martin, and I saw some more, but it was too high for me to reach. The little bay is worth a visit on its own account. And as I sat to rest on a rock above the sea the voices of children, playing with the boats and lobster baskets below, came round me like music, tempting me to descend and survey nearer a picture superior to any in even Collins's happiest style.

A stranger was then a stranger at Combe Martin, and the bright-cheeked urchins left their play, and came running bare-legged out of the water to gaze. "Did I want Ferns?" Presently the happy group were tumbling up the rock I had looked at with such timid eyes; but children's hands are destructive implements, and fronds without roots were the only result of the scramble.

I made another attempt to reach *A. capillus-Veneris* at Ilfracombe, taking with me a lad who seemed ready to climb the side of a house if necessary; but all the available tresses of Maiden-hair had been shorn away, and I returned with only a tinfal of sea creatures to reward me for my pains.

It seems cruelty so entirely to destroy the habitat of any Fern: yet, if the present rage continue, I see no hope of any known species being allowed to remain in its old haunts. The poor Ferns, like the wolves in olden time, have a price set upon their heads, and they in like manner will soon altogether disappear. We must have "Fern laws," and "preserve" them like game.

In the neighbourhood of Ilfracombe I found a few *Scolopendrium*s with the ends of the fronds cleft, but they were hardly worth bringing away. I also found *Polystichum angulare* growing in magnificent profusion; *P. aculeatum* was comparatively rare.

Between Launceston and Holsworthy I found the only *Lastrea Fœnisecii* I have seen wild in Devonshire; it was growing in an old hedge by the roadside, and the fronds were small and ill-grown, wanting the rich fulness of size and colour that distinguishes the *L. Fœnisecii* in Cornwall. There is no mistaking this Fern when you find it. It has the appearance of crisp curled Parsley, so entirely "recurved" is each pinnule.

I have heard *L. recurva*, or *Fœnisecii*, or Bree's Fern, described as very refractory in cultivation, but I have never found it so. It will adapt itself to any situation where there is good drainage; stagnant soil is its death. In dry sunny aspects the fronds of *Fœnisecii* will almost creep along the ground, as if to make a shade for each other. In an open space, where there is shade from a hedge, it will shoot up its feathery sprays of tender green tall and strong, making a very handsome plant. It is always interesting in its growth and habits, and the young fronds are often green in midwinter, and make lovely foliage for the vase. I have never found it on rocks, or in any county but Cornwall, save in the instance I have named, in Devonshire. In cultivating it in Warwickshire, I used a little rich earth mixed with leaf mould.

In Scotland I found a variety of *L. dilatata* with its pinules curved in a convex manner. I showed the specimen to Mr. Bree, and he thought the curved look would vanish with time. This has not proved to be the case, though I have had the Fern for some years. *Lastrea cristata* I have never found, but I have some good plants of it; it increases quickly in cultivation. *L. cristata* has one peculiarity which I have noticed in no other Fern—the venation is clearly defined on the outer side, making a regular pattern on the pinule. This has been the simple mark which has always, and at once, made *L. cristata* known to me. The fronds of *cristata* are slender and pretty, but they are of so fragile a nature that they bow, bruised and broken, before a high wind, so that the plant has usually an untidy appearance in the fernery.

Asplenium marinum I found at Exmouth growing on a rock far removed from the sea. It also grows on the coast about Teignmouth, and more plentifully near Dartmouth, that strange old western town, with its ill-conditioned streets, leading nowhere, huddled like waifs by the river side. The best thing to be done when you get into Dartmouth, whether by the pretty river route or by the railway, is to get out of it again by hiring a boat, and rowing to the mouth of the river, where you may pry after *Marinum* in caves hollowed out of the rugged rocks, where tired waves break and die, and sea birds wail their melancholy cry. The coast on the right of Dartmouth begins to assume the characteristics of Cornwall; the red sandstone gives place to granite, and the softer features, that make the charm of Devonshire scenery, disappear altogether. The Devonshire dialect, so soft and courtously misleading, is soon lost in the rougher tongue of the "Tre," "Poll," and "Pens" of the dear Cornish land—a land so separated in the character of its people and natural scenery from the rest of England, that during my first visit to Penzance, I found myself continually saying, "When I get back to England." It is a land of Ferns and wild flowers—a land of old ecclesiastical monuments and wayside crosses. Each village has its history and its records of interest; its church—a landmark to sailors at sea, and to travellers across the waste; its baptistry—the bubbling waters of the clear spring, rising on some dreary moor, guarded by a few rough slabs of stone covered with Ivy and decorated with Fern. The true Cornish man has a rough intelligence that beams on his face, and takes expression in words of singular fitness to the subject which engages him. He has a self-respect that gives to his conversation a freedom unaccompanied by any mixture of vulgar familiarity. Most of the Cornish miners have their bookshelves containing volumes so successfully read that humility keeps pace with the knowledge acquired. This intelligence, with the apt way of expressing it, gives a stamp of originality to the people that you can hardly fail to recognise.

After a visit of some months to Penzance, I went a tour in the north of England, and in going over a silver mine I was accompanied by one of the miners, who explained the different details of the mine, and the processes of refining the silver. At last we arrived at the final process, and saw the silver purified of all its dross. I made some slight remark to the man on the exceeding beauty of the ore, which he instantly answered by saying, "Yes, madam, I trust we shall be found as bright as that when the trials of earth have done their work, and purified all sin from our hearts: we sha'n't think much of the fire we have gone through then." I looked up at the intelligent face, and said, "You are from Cornwall?" He asked me how I knew, and indeed it was so:

and then he went on to tell me of his home and prospects in the country he loved so much better than the north.

"One and All" is the motto of Cornwall, and it expresses much that is pleasing in the character of the people.

The gardens I saw in Cornwall (they were not many), had a look of southern untidiness, Nature being left much more to herself than in the north. Large *Camellia* trees were in the borders, and on Christmas-day I gathered a nosegay that would not have disgraced midsummer. The house I inhabited had a terrace in front, with a lawn sloping down to an orchard, over the bloom of which you looked on the sparkling sea. To the left was St. Michael's Mount and Marazion, to the right the fishing village of Newlyn and the sweep of rocks by Mousehole.

But I am leaving the Ferns unnoticed too long, and they will lead me into many a well-remembered spot, and take me amongst fishers and miners, who had always a kindly word for the stranger, that often and often left her the wiser for its speaking; and we cannot say as much for all the conversation we hear in drawing-rooms.—FELIX-FEMINA.

POTATO CULTURE.

I HAVE been much interested, amused, and, I must add, a little confounded, in reading the article in No. 194, the latter feeling brought on by the numerous sorts of Potatoes in *esse* and *posse*. Are we to have as many sorts of Potatoes as of Roses? If so, I, a simple cultivator of a few kinds for the wants of my family, fear a sort of supervening delirium—a Potato distraction—inclining one to leave old favourites and try new kinds. Will you, therefore, Messrs. Editors, allow me to give my forty years' experience, not in a scientific article like that of your correspondent "UPWARDS AND ONWARDS," but merely as the simple annals of a very simple culturist? I may give a few useful hints to those who wish to have a good Potato on their table every week throughout the year; and so I beg of you to pardon my odd ways of cultivation.

About the middle of February I have all the refuse litter and leaves gathered, and mixed with an equal quantity of stable dung. This mixture is then thrown together in a large heap, and as soon as it commences to ferment it is made into a bed 6 feet wide, and 30, 40, or 50 feet long, according as my mixture holds out. After allowing it to heat and settle for about a week some stakes are driven in along each side and the ends, and a three-quarter-inch board a foot wide is placed inside the stakes to support the mould, 1 foot in depth, which is then placed on the bed and levelled. The Potato sets, all greened and with their eyes ready to start, are then planted about 8 inches deep, 1 foot row from row, and 9 inches apart in the rows. I plant them thus thickly because I am rather extravagant, and take some up when very young; but by taking up every alternate row and leaving the others to make a more mature growth, I appease my conscience, which is always at war with extravagance. By the end of February my bed is planted. Its slow fermentation helps on the roots; but it is not powerful enough to resist March frosts, so I cover it with boughs of trees, the "loppings" of the winter, and on them place a covering of litter. This is taken off in April, and light and air admitted to the young shoots, then well above ground. In frosty nights some old mats are thrown over the boughs, or, if the season is mild and early, the boughs are removed, the bed arched over with rods, and mats thrown over them. My situation, or at least my Potato-bed situation, is cold and bleak, yet just as I am getting tired of those flat-flavoured Flukes, in the middle or end of May, my mildly-forced new Potatoes are ready. They soon become ripe, and last well on till the early sorts planted in the open borders are ready.

Formerly—some twenty years since—I used to plant in my hotbed an early sort of round Potato called Early Ten-week. This sort I see was exhibited at the last show by Mr. Moffat in his prize collection of round Potatoes. This, for a round Potato, is very good. I then soon after it was introduced, planted in the same bed the Early Handsworth; but I soon found that this kind, although quite as early as the Ten-week, was hard and indigestible, and I therefore gave up its culture. Of late years, my taste having become more refined, I have planted the Ashleafs (the old sort),

Myatt's Prolific, and the Royal, all of them having the excellent and unique flavour of the type. Last spring I confined myself to the old Ashleaf and the Royal, the latter being quite as early and producing about three times the quantity of the former; and as far as I can judge I shall never again plant round Potatoes, their flavour is so infinitely below that of the finer kinds of Kidney Potatoes.

Is it worth while to tell you how I cultivate my open ground Potatoes? Well, perhaps it is. In the first place, I always plant in ground trenched or stirred with Parkes's fork to 22 inches in depth: if thought to be exhausted a good dressing of thoroughly rotten manure is well mixed with the soil to that depth.

Secondly. I never plant Potatoes in the same ground for two consecutive seasons, but always alternate my crops.

Thirdly. I plant for the most part whole sets of the second or even third size, if the tubers are large, greened by exposure, and their eyes well developed.

Fourthly. Having plenty of space, I afford them much more room than is commonly given, so that each plant is well exposed to the sun and air. My distances are therefore 3 feet apart row from row, and 2 feet apart in the rows. In digging-time it is a positive pleasure to see the beautiful tubers tumbling up twenty-five, thirty, thirty-five, and upwards to each root of such sorts as Royal Ashleaf, and Early Racehorse Kidneys. I ought, however, to add that my soil is very favourable, a deep sandy loam on a dry subsoil; and my climate, within thirty miles of London, also favourable.

Fifthly and lastly ("whilk word I am verra glad to hear," as the young Caledonian said to his mother one day at kirk during the sermon), I never mould up my Potatoes, feeling that to cover the young roots with earth so as to keep out the influences of sun and air can do no good. I hoe between the rows frequently; and if in August any tubers are peeping out owing to the abundant produce some earth is drawn over them with the hoe, and that is all the moulding-up I do.

And now a few words about new sorts of Potatoes, which, like new sorts of Peas, Cabbages, and Broccolis, are by far too numerous. As to Potato-showing, or judging of their qualities by their appearance, it is fudge. If a jury of Potato-lovers could be convened, and have a few specimens of each of the sorts shown for prizes well cooked and then tasted on the spot, some good would probably accrue; but, as I know from experience, the most fair-looking are often the most deficient in flavour—witness those fine-looking Fluke Potatoes now so common in the London eating-houses, very tempting in appearance but flavourless. I may be peculiar in my ideas, but as far as my experience has gone no round Potato should find a place on the table of a gentleman, if the soil and climate will allow of the culture of the fine sorts of Kidney Potatoes. I used to think a few years ago, when Regents and Dalmahys were the only sorts that escaped the disease, that no better kinds need be wished for; but now that the disease seems to have left us, and the fine kinds of Kidney Potatoes can be had in perfection, I do not suffer a round one to appear on my table. It may, perhaps, assist some of your readers—confounded as they must be by the long array of names—if I say what I have deliberately settled down to.

During the months of June, July, August, September, and October I confine myself to the Ashleafs; and as the Royal and Myatt's Prolific are great bearers and have the true flavour of the old sort, which is a delicate grower and unproductive, I confine myself more especially to the former, which I think will in time be the only sort I shall cultivate for the first crop. Its fault is being too robust; in rich soils its tubers are so large as to put forth protuberances. In November I take to the Lapstone (its other name, "Haigh's Kidney," should be given up), which here is always most delicious. This keeps its flavour, and fine, firm, dry consistence till the middle of March; and then I think a sort called Hudson's King will not disappoint the lover of a good Potato, for, like the Lapstone, it is firm, dry, and excellent. A friend has sent me a seedling Lapstone exactly like its parent, but larger and more productive.

It will be seen from what I have said that three fine kinds of Potatoes carry me through the year, and it is really quite a relief to think that it can be done. It is quite possible that some soils and climates will not allow of these fine

kinds of Kidney Potatoes being grown in quantity; if so, other kinds should be sought for, so as to make the supply as perfect as possible, with as few sorts as possible.

Before I mention other kinds of Kidney Potatoes which have come under my notice, I feel that I ought to say how Potatoes are cooked here. As soon as their skins become set in early autumn, so as to lose the delicacy of "new Potatoes," they are cooked in one of Barlow's steamers, and brought to table "in their jackets." How delicious the Lapstones cooked to-day, flanking the Christmas beef! every one with its jacket unbuttoned showing the yellowish white, firm, yet floury tuber, seeming to say "Eat me," which request was promptly complied with.

There are several really good kinds of early Kidney Potatoes besides the varieties I have noticed. The Early Racehorse is early and a good bearer, but its foliage is crumpled, its vines straggling. It blossoms abundantly, and its flavour is not equal to the Ashleafs. Early Nonsuch and Early May are both early, but not productive. Mona's Pride is a very handsome early Kidney, fit to show for a prize, but in my soil it is deficient in flavour. The Gloucestershire Kidney is early and of good flavour during the summer months. Dawes' or Webb's Nonpareil is a fine prolific late Kidney, but it lacks the firmness and fine flavour of the Lapstone. And then we have the Lemon, the Silver-skinned, and the Prizetaker Kidney Potatoes, about which the less that is said the better. There is no doubt but that in some soils and climates some one or two of these varieties may succeed better than they do with me, but I have come to the conclusion that in a good dry soil like mine three varieties are enough to carry one through the whole year—1st, the Royal Ashleaf, as being as early or earlier than most of them, and of extraordinary productiveness from May till November, and, if not too ripe, even all through the month; 2nd, the Lapstone, from November till March; 3rd, Hudson's King, from March till the end of May. I am not yet quite certain that the Pink Fluke may not come in at the extreme end of the winter Potato season, but I almost fear that its flavour is too much like that of its parent; at any rate there is not the least doubt about the three sorts I have named. They are all productive and of the best possible flavour—what more can be wished for?

I dare not employ a signature so high and significant as your correspondent in No. 194, and so allow me to sign myself—FORWARDS.

THE ARBORETUM VERSUS THE PINETUM.

THERE are many indications of the boasted progress of the present age being more in particular directions than partaking of a general character, and, perhaps, it is better that it should be so, for to grasp at too many things at once often ends in failure with all, and when a certain branch of a pursuit has enjoyed its full share of favour, and further advance with it becomes difficult, the public are then readily brought back to the starting point. Thus it often happens that a subject is at first thought too comprehensive, and one of its branches only is pursued, but afterwards the whole is grasped.

Now, gardening is no more exempt from caprice than other pursuits, but rather the contrary, otherwise the present popularity of a few varieties of plants used in the parterre, would not have driven the former occupants almost out of cultivation. My purpose, however, is not now to attack the modern bedding system, and I may remark in passing, that I have some doubts whether those who do abuse it are really in earnest; but there is another and much more important feature in gardening that promised forty years ago, or more, to materially alter the then-existing aspect of affairs, but which very soon afterwards narrowed itself into one of the subsidiary channels, and has continued to run in that with but very little intermission ever since. Certainly it has not done so without good results, as many widely-scattered examples testify, still the original conception has been only followed out in one of its branches.

Before gardening periodicals came into existence, whatever advances were effected by public or private enterprise, were made under great disadvantages, and at great cost as compared with the present day. New plants were less sought

after, not that they were not thought worthy of notice, but simply because they were not known, or if so by name, that was all the information given of them, consequently buyers were unwilling to give the high price demanded whilst such uncertainty existed respecting their merits; and in Loudon's "Gardener's Magazine," supplying knowledge of this kind was one of the points aimed at by the talented conductor, and speedily his enlightened and comprehensive views on the many departments of horticulture, as well as all the sister arts, gave a stimulus to the cause. He being ably seconded by others similarly liberal in disseminating their knowledge, a new era might be said to have dawned on our ancient art, and no doubt if the worthy compiler of the many encyclopædias bearing on rural affairs had lived till the present day, due honours would have been paid to the exertions he had made in the cause. As it is, we can only now do honour to his memory, and calling to mind some of the duties he left us as a legacy, let us see how far we have made progress in executing them.

It must be acknowledged that the writings of the master spirit of his day often gave tokens of his love of the highest and most noble of all cultural pursuits, the planting and management of trees. Alas, that such an exalted pursuit should have resulted in the pecuniary ruin of one so devotedly attached to it; but such is human nature, individual hobbies may be ridden too hard, and no one derive any benefit from them; but in the above case the advantages were given to the public in the costly "Arboretum Britannicum," which is yet a standard work on the subject. But let us see if we have done our part in carrying out what the author suggested elsewhere in this particular department, and it must be confessed that we have fallen short of carrying out what the distinguished author urged about the time of the passing of the Reform Bill, with regard to renovating our woodland scenery by means of fresh introductions. The importance of these he strongly urged on planters for landscape effect, as well as for profitable investment. The word arboretum was then a popular term to designate a mixed plantation, with a fair promise of growing into a vast and magnificent assemblage of objects; but alas for the failure of human enterprises, the comprehensive "arboretum" which promised to bring amongst us families hitherto unknown in cultivation, dwindled down into one of its branches, the pinetum, and the latter has with very little exception usurped the whole of the patronage bestowed on out-door trees. Now, it is far from my purpose to disparage the many noble species of trees belonging to this family that have from time to time been added to our collections during the last forty years, and which yet continue to reach us; but assuredly we may find room for other trees besides Piceas, Pinuses, Thujas, Wellingtonias, Cedars, &c. Assuredly some of the countries whence the many importations received of late have been made, also furnish deciduous trees of more or less value or beauty, and equally entitled to our notice. To limit our whole attention to one particular class is no compliment to our discernment, for when we look at the great beauty of many of our indigenous deciduous trees, we are led to expect that those from other countries also possess merits which only require to be known to be appreciated, and I hope yet to see the time when the rage for Pinuses from all quarters of the globe having exhausted itself, deciduous and other trees and shrubs will be sought after with equal zeal, and people will then wonder how so much worth and beauty could have escaped the notice of the first explorers.

Whilst thus calling attention to the neglect which has of late been the lot of deciduous trees, and unconcern with which new ones are received, I do so in the hope that they will become more fashionable in time. We have seen Tulips, large Gooseberries, the Dahlia, Orchids, Ferns, and Roses have their day, and some of them still retain their popularity, yet there is ample room for many specimens of the most aspiring of all the members of the vegetable world. They attain a larger size, and present forms and outlines more noble than anything else can lay claim to. In our own country no evergreen attains the proportions of the deciduous trees, and these more particularly associate themselves with our everyday notions of beauty, and our daily requirements (and foreign countries enjoying a similar climate must also possess like ornaments) look at the

Oak, its beauty and utility, and there are more species of this than most people are aware of, and, doubtless, many of them suitable to our climate. Other native trees have kindred species in distant lands only wanting to be introduced to thrive under our comparatively mild winters, while many species, doubtless, exist in the vast extent of mountainous country that fringes the western coasts of both the northern and southern continents of America, as well as many other districts of similar temperature. Deciduous trees existing more numerous in countries where the winters are severe, they will generally be found hardy. Many of these, too, furnish the most lovely flowers; for instance, where is there an exotic plant that excels the Horse Chestnut? while the Apple, Cherry, Hawthorn, and a host of others, have few equals in any class of plants. On the other hand, some present us with a foliage extremely varied, both in form and hue, and some again reserve their beauties until the autumn, when peculiarities in colour are much wanted. Of the latter class the wild Cherry often fades into the most brilliant vermillion.

My purpose, however, just now is not to descant on this subject, but to endeavour to revive that love of Arboriculture which of late has been confined to a single branch, and though I by no means seek to disparage the pinetum, which presents us with so many objects of beauty and interest, it ought not wholly to usurp public patronage. Ornamental as Conifers are, I would simply ask their most enthusiastic admirer what would our English landscape be without deciduous trees? and the accessions to their ranks in the last forty years have been few indeed compared with what has been done in multiplying the evergreen class. I trust, therefore, to hear of new introductions of deciduous trees, and of greater prominence being given to those we already possess; for if fashion can only once be directed in this channel, it will be found that objects of beauty and interest will meet its progress at every step, while the many lovely flowering shrubs we possess of this class will receive accessions to their ranks from other quarters, and deciduous trees and shrubs once more take that place in the vegetable kingdom to which their numbers, magnitude, and general importance fairly entitle them.—J. Rosson.

STRAWBERRIES.

I RECEIVED the following from H. Taylor, Esq., of Fencote, Bedale, Yorkshire, an amateur who takes delight in, and much pains with Roses and Strawberries. It may interest the reader, and certainly it bears out what I have said.

He says, "La Constante did not do well here last summer. It was the first that failed for want of water. The fruit was coddled before it was full grown, and it never came to perfection. I have this day dug up a plant, having a suspicion that it did not root freely. My suspicion was verified. The roots do not go down so deep as Strawberry plants usually do, but spread about the plants. This may in some measure account for its being the first to succumb under the heat of a tropical sun. It is handsome and good in colour. I shall give it another year's trial. It stood the winter pretty well. La Constante appears to me delicate in habit, and is very slow to establish itself. My plants look very sickly, and the leaves are a bad colour, what runners were made were very small. I have potted them, and put them into a cold frame for spring planting. None others have required to be so delicately brought up. I fear it will not suit the climate of England."

He then speaks of three other Strawberries, which the reader will remember I have specially recommended.

He says, "Rivers's Eliza withstood the excessive heat of last summer better than any other Strawberry. It yielded abundance of fruit, which was large and good. Empress Eugénie was the next best, and excellent. Eliza and Empress Eugénie run freely, and soon make abundance of roots. The same may be said of Wonderful, which yielded abundance of fruit of good quality, and withstood the excessive drought of last summer in a wonderful manner. These three are remarkably healthy and hardy, are covered with rich dark green foliage, and have not been affected in the slightest degree by the late frosts. The Frogmore Pine held out wonderfully, and yielded large and good fruit. This

variety in my soil does not make many runners. It does not run freely at any time. In my rich, loamy soil it strikes deep at once, and does not make many claws, but what are made go very deep, and are thick in substance."

With the exception of the shy-running of the Frogmore Pines, which ran freely enough here to enable me to make three new plantations tolerably early, the above remarks of Mr. Taylor's coincide with my experience, confirm my statements, and justify my recommendations. They are the best four Strawberries here, and have never failed to gratify me and my visitors. Add to these the Royal Hautbois, Bicton White Pine, and the old Red and White Alpines, and you have a good lot, sufficient for all practical purposes out of doors.—W. F. RADCLIFFE, *Rushton*.

HEATING A SMALL GREENHOUSE BY FLUES UNDER THE FLOOR.

I HAVE several times alluded to this plan, as one of the simplest and most economical where the trouble of a brick Arnot's stove inside was too much. A lean-to house adjoining a dwelling-house was thus heated, because every other proposed means was too expensive. The house is 17 feet long, 10 feet in width, 12 feet in height at back, and 7 feet in height at front, $4\frac{1}{2}$ feet of which is glass. One end next the small furnace is solid wall, of the other end more than $2\frac{1}{2}$ feet is glass. Next the glass end is a flagstone pavement 5 feet in width. The rest of the floor is paved with nine-inch tiles. A small furnace was placed outside the wall low enough for the fire-bars to be from 15 to 18 inches below the bottom of the flue, and as it was not desirable to interfere with the above flagstone, a flow flue from the furnace to the flagstone, and a return from it to the small chimney, in all about 24 feet of flue, were formed. The flues were made near the front, where the walking would be, were from $4\frac{1}{2}$ to 5 inches wide, and, built of three bricks on bed, were about 8 inches deep, both inside measure. Pieces of slate formed the bottom, a thin house-roofing tile was laid over the top, and over that the paving-tiles were bedded in a little mortar, on exactly the same level as the rest of the floor, so that all means of heating are thoroughly concealed, whilst there is the advantage of having in winter a comfortable, dry, warm medium to walk on. No plaster of any kind was used for the flues, except in laying them.

This plan answered extremely well, but severe frosts, as in 1860 and 1861, were just kept out, owing to the glass end, and the distance of the flues from it, in consequence of the flagstone. This season, from altering and enlarging the dwelling-house, the tile floor of this little greenhouse was so much disturbed by scaffold poles, &c., that it became necessary to take up the tiles and lay them afresh. In doing so, as there was still the same objection to meddle with the fine polished flagstones, and as I thought it desirable to have more heat in the house, without rendering any row of tiles very warm, I had another return-flue made of the same size as the others, four walls of $8\frac{1}{2}$ inches thus forming the three flues, covered as well as the whole of the brickwork by the three nine-inch tiles close to each other. Two bricks on edge would have done for the sides of the flue as well as three on bed, but plenty of bricks were at command, and it was desired to have all firm beneath the feet. Nothing can promise better than this plan.

In making the furnace, I had the whole of it put inside the house, the top fire-brick of the furnace being some 16 inches below the level of the tile-floor. My object was to secure all the heat I possibly could from the small quantity of fuel used. I was disappointed, because the floor immediately above the furnace never became heated. Where the heat rose by an inclined plane to the level of the bottom of the flue, the tiles there became nice and warm, but behind that over the furnace you could feel no heat. I thought this was owing to the draught taking the heat forward, and I recollect stating I would have been nearer my purpose if I had had the legs of the furnace immediately below the floor. I think now I was wrong in such a surmise; on examining this part like the rest, I found the space between the furnace and floor filled chiefly by old bricks placed as open as possible in pigeon-hole fashion. It struck me that this confined air was the cause that kept the heat from the

tiles. I had bricks, &c., laid solid up to the flooring-tiles, and now though this space directly over the furnace does not heat so fast as the flow-flue, it becomes nice and warm, and retains the heat longer than the flue. The furnace and all else is the same, and want of heat in one case, and plenty of heat in another, I attribute to openings and solidity respectively. Thoroughly confined dry air becomes one of the best of non-conductors.—R. FISH.

VINES AND VINE GROWERS.

THAT there is ample room for more Vines in England I think no one will deny, and I consider that we might every year gain a large amount of money if the resources available for their cultivation were made use of. In a manufacturing country like this there are thousands of steam-engines connected with different kinds of works which are sufficiently far from large towns, and if the waste steam were conveyed into a house in which Vines were planted it would afford sufficient heat to grow them, and well too. For a number of years I had charge of a vinery which was heated by steam from a cotton mill, and I never had better Grapes, and less trouble in looking after insects. There were two double rows of pipes, and at the end of the last return I had a small brass tap, something like those which are put on ordinary half-inch gas-piping. Every spring when the Vines were started I turned the tap partially, and it being an open one allowed the steam to gently come out into the house, and if more vapour was required the tap was fully opened. This saved a deal of syringing and "damping down," in fact the Vines rarely required it. I grew Black Hamburghs at one end of the house, and White Tokays at the other, and had good crops yearly. There is generally plenty of old steam piping laying about works, and if it were put together, and some of our modern cheap houses erected, hundreds might have Grapes without the cost of fire. In houses erected on the principle I have named such pests as red spider are never found if the tap is only turned in the manner I have named.

I made a tour in September principally to see Grapes, and amongst other places I went to Mr. Meredith's Vineyard at Garston, near Liverpool, which, I think, all young gardeners might visit with profit, and many old ones might be disabused of some of their antique notions. Yet the principle on which Mr. Meredith grows his fine bunches and berries is old enough. His system is to some extent like that of growing Gooseberries for shows—namely, few on a plant. I have had quite as fine berries as Mr. Meredith, but nothing like his bunches. Where he had about six bunches on a Vine I had from twenty to twenty-five; both his Vines and mine are about the same age. His fine dry borders this year and good new soil might be imitated with advantage in many places.

The week after visiting Garston I went to see a man who has an old Vine which he allows to bear nearly all the fruit it sets, merely thinning out the berries a little. I had met him several times during the summer, and he invited me to come and see his Vine; "for," he said, "you never saw such a sight in your life" (and I hope I may never see such an one again). He advertised in our local papers, "Such a sight as could not be surpassed! Admission one penny." Well, I went to see his Vine, and the reader may guess my horror, or rather disgust, when I found about 150 bunches of Grapes mostly as green as they were the first day they set, and not a green leaf on the Vine. "I wish I had taken about another hundred bunches off," said the old man. "Taken," I said as soon as I saw them, "I would have taken the dubbing-shears to them if they had been mine." I was partly pleased, and I also pitied him; for he had bragged so hard, and told it up and down this part of the country that he would have to teach us gentlemen's gardeners how to grow Grapes. How his Vine will fare next year I cannot say, for the wood was anything but ripe, and there were no leaves. I got him out of a difficulty some years since when he had overloaded his Vine, but it had plenty of good leaves on then; but next year I fancy he will not advertise.

We have a goodly number of cottage gardeners here who have each a Vine, but they all make the mistake of leaving too many bunches. I have seen lots of berries no larger

than Black Currants when they were ripe. I have done what I could to induce them to abandon this practice; but they see a large quantity set, and they have not the heart to cut them off, so all are allowed to ripen together.—JOHN HAGUE, 36, Mount Street, Ashton-under-Lyne.

SWISS GARDENING.

I HAVE been so much occupied of late that I have not been able to keep my promise, which was to give some sketch of continental gardening as compared with our own.

We very often say we are the greatest gardeners of the day, and it is a fact that cannot be denied. I am unable to say much of French gardening, never having resided for any length of time in France; but I affirm that Swiss gardening is far below that of England. This is an opinion founded on personal observation of some years. To begin with, their garden implements are very primitive; their spades are generally a foot longer than ours, though, to be sure, they import largely from England; in every ironmonger's shop one sees "Sheffield wares." But many of the gardeners there, like those here, have a prejudice against anything new, and so the long unwieldy *bêche* remains in favour. Many other tools are, in a like manner, heavy, and it requires no small amount of strength to use them, as I can testify. It would occupy too much time to give a description of all their tools, which, however, are not numerous.

Before drawing comparisons between Swiss and English gardens I ought to remind your readers that the climates are very different, and that this, perhaps, more than anything else influences the style of gardening. It is evident to every one who has spoken with the Swiss country gentlemen that the English style is liked, only the great summer heats prevent its being carried out. The Genevese, however, have an opportunity of seeing a garden laid out as far as possible in our style—that of Sir Robert Peel on the north bank of the lake; but here, as elsewhere, during the summer the lawn is parched and brown, and this distinctive feature in all English gardens is thus lost. Again, the massing and ribbon-border systems, so much in vogue here, cannot be carried out to such perfection there; during the summer heats the flowers droop and die.

As yet I have said nothing about the capital or the energy of the proprietors. As a matter of course, the wealth of the owner of the garden makes some difference in the style in which it is kept; but there are many opulent families in the Canton de Genève and Canton de Vaud whose gardens are shamefully neglected—the few glass houses falling to pieces for want of putty and paint, and the trees and shrubs growing in unheeded confusion, the borders not raked, the weeds undisturbed.

It is much to be regretted that there is no substitute for Dartford gravel to be found in Switzerland. In all the gardens in which I have ever walked, the same grit or small pebbles were the covering for the paths, and they form a disagreeable foothold. When raked over regularly, they look neat, and that is all the praise they merit.

The noble trees, Oaks, Elms, and Thorns, are rare, I might almost say unseen in the gardens, though one frequently sees Chestnut and Mountain Ash trees of fair size. The Spruces, Larches, and some other Conifers are to be met with large and well grown, and were they but properly thinned would be very beautiful.

All this would seem to be saying very little for Swiss gardening, and were it not that I have been able to judge myself, I should be sorry to write so strongly on the subject. But a word on the other side. They grow good fruit. Any one walking along the market-place in the summer months will be astonished both at the quantity and quality of the fruit exhibited for sale. Raspberries, Strawberries, Cherries, &c., are to be bought at a very low figure, as are also Apples, Peaches, Plums, and the like. Melons and Gourds of all sorts are also to be found in abundance, and in the autumn small but sweet little Grapes come in cartloads to the fruit market. Now all these fruits are brought to market by the growers. Very early on the market-day troops of women gaily attired, with the gaudy but picturesque handkerchief tied over the head, come and take their places on the kerb with their one or more baskets ranged in front of them full of fruit of one kind or another. Many get their husbands

to bring them in the common *charrette*, which stands by till the evening, when they all ride home, and give some less fortunate comrade a lift. Some bring flowers—*Pelargoniums*, *Fuchsias*, and the like—to be sold each at prices varying from 20 to 30 sous, which shows them to be common plants of no shape or cultivation.

But this letter is getting to be longer than it has any right to be, and so I will finish, hoping at some future period to be allowed to go more into detail as to cultivation, &c.—PATELIN.

HORTICULTURE A SCHOOL.

THE Rev. Dr. Osgood addressing a public meeting remarked that horticulture is one of the best pursuits to follow for mental culture—that gardening is a school, a workshop and a parlour. As a school it begins with the earth or mineral kingdom, and rises through the vegetable and animal world.

What a school for study is afforded by botanic gardens with their vast collections of trees and plants; but even a small clod of earth is a fit subject for study, exemplifying the truth that "wisdom is oftentimes nearer when we stoop than when we soar." Through all the grades of vegetable life, from the minute microscopic plants to the tall Oaks, there is a world of study and of wisdom. Botany is an interesting study, pursued through the laws of vegetable growth, particularly when illustrated by the familiar plants around us. The gardener studies to get the greatest yield, and he should combine the beautiful with the useful instead of striving to separate them. We may hold up an Apple as a thing of use, and point to a flower as a beautiful object, and these, if not brother and sister, are at least first cousins. Besides a school of learning, the garden should be a school-house of Divine faith.

As a workshop, the garden is one of the very best places to develop bone and muscle. Let a lady take a hoe or rake, and in a few hours every muscle will find its exercise; and the garden is a pleasant place in which to see our wives, our sisters and daughters engaged—the best of all gymnasiums. Flora and Pomona were called by the ancients feminine divinities. Why may we not class gardening among the fine arts? If the cities were left to their own influences, with no migration to or recruits from the country, the race of citizens would become extinct; hence the attempt to bring a portion of the country and locate it in the city. Here, too, we see the relation of landscape gardening to the beautiful arts: for, besides some idea of architecture, the gardener must have an eye for sculpture, and select and plant his trees with reference to their sculptural effect. What fine sky-lines are often produced by a group of trees as seen in the evening. Besides, the gardener is a painter of no mean order, using the colours which nature furnishes and it is for him to apply them with fitness. How very little, too, it takes to surround one's place with flowers, compared to the sums paid for needless luxuries. Take 300 dols., for instance, which a person can easily eat up at a fashionable restaurant with a few friends, and spend it for Phloxes. For full two months one can enjoy their rich bloom, and they remain for many years. There is poetry, too, in the garden, which none better know than that father of American poetry, William Cullen Bryant, who is both eloquent and poetic over his flowers. Our education would be much more perfect were we to unite the study of gardening with that of books.

The garden is a parlour with pleasing associations. We want something when we come together to unite us socially and bring us into affinity, which the garden is eminently calculated to do. Are not the Strawberry and Grape ministers of civilisation, if not of evangelisation? In enjoying the lovely tints of a flower we exhaust nothing, and rob no one, while at the same time we are brought out of our own selfishness.—(New York Tribune.)

ROYAL HORTICULTURAL SOCIETY.—The first of the weekly Saturday Shows was held at South Kensington on the 7th inst., the subject invited being Chinese Primulas. Messrs. E. G. Henderson and Mr. Coysh, gardener to Mrs. Wood, Rugby, had first-class certificates for their collections, the former having their new Fern-leaved kinds, also a handsome

variety of these which was shown separately and received a first-class certificate. An excellent collection came from the Society's Garden at Chiswick. Messrs. A. Henderson sent a collection of flowering and ornamental-foliage plants; Mr. Short, Clewer Park, Libonia floribunda, a very ornamental *Correa*-like plant; Mr. Hedges, Wallingford, *Bougainvillea speciosa* in excellent condition; Mr. Coysh, Sericographis Ghiesbreghtiana, *Oncidium divaricatum*, and other flowering plants, also cut blooms of *Camellias* and *Lapageria*; and Mr. Smythe, gardener to Lord Sondes, a good specimen plant of *Correa magnifica*. Mr. Ingram, gardener to Her Majesty, had a fine Cayenne Pine and Mushrooms; and Sir Joseph Paxton, M.P., some very good Black Hamburg Grapes, ripened without artificial heat in one of his patent houses. Heat had only been occasionally applied after October to keep out frost and dispel damp. The centre of the table on which this little show was set out was occupied with a fine *Encaphalartos Altensteinii*, which is just throwing up three heads for flowering.

RIPENING OF LATE PEARS.

SEPTEMBER 16th, 1864.—Gathered Marie Louise (A) from a standard in a sheltered corner, the largest on the tree being selected, and stored in a dark, vaulted cellar of a nearly uniform temperature of 52°.

October 8th.—Gathered Marie Louise (B) from same tree, and stored them similarly. Fruit still hard and unripe, but nearly one-half larger than A, which are to-day quite ripe and melting.

October 24th.—A over-ripe and decaying; B still hard and not at all melting.

November 9th.—B slightly over-ripe.

November 29th.—Gathered Marie Louise from same tree hard and unripe. Stored a portion (C) in a dark cellar as before, another portion (D) in the open air, protected overhead from rain by a glass covering, but freely open to ventilation laterally, and fully exposed to sunshine.

December 15th.—C over-ripe and decaying.

December 25th.—D part over-ripe and decaying, part ripe and melting.

The above noted in my pomological diary, may contain a fact or two in furtherance of the inquiry started by "T. G." (page 512). Early Pears, if I mistake not, are retarded in their ripening by premature gathering, but the rule would seem to be otherwise with later sorts, for by successive gatherings it would appear that Marie Louise from the same tree may be had fit for table use for a period of upwards of eight weeks. At all the dates given the fruit was fully entitled to be called delicious, that which was ripened slowly under glass being quite equal to the other lots forwarded more rapidly in the higher temperature of the cellar.

It would be an interesting subject of inquiry whether we are not altogether wrong in excluding the light from late-ripening fruit. Light is, indeed, pre-eminently the great ripening agent in nature, and though unquestionably a low temperature and darkness will retard the process, still when the desired period of perfection approaches we are wrong, I think, in not employing light as well as heat to further our object. The fruit D rested on a plate of glass elevated about 2 inches above the surface of the ground, the protecting glass overhead being some 6 or 8 inches higher. The wind played freely over the fruit, which was, notwithstanding, plump and free from shrivelling like that from the cellar. For very late Pears I would suggest the Waltonian case as the best of all means that could be employed for ripening them.

Will "T. G." and a few others join with me in experiments in this direction? Light in its relations to vegetation has not received its due share of attention from horticulturists, who seem to overlook the fact that Nature always increases heat and light simultaneously. On another point also there is wanted a collection of facts to base sound practice upon, I mean the periods of increase in size of some of the commoner varieties of fruit. Will some of the many interested in pomology devote a few minutes once a-week to registering in the coming season the length from the junction of the stalk to the eye, and the greatest diameter perpendicular to the axis of growth, of the Jargonelle, Marie Louise, Louise Bonne, and a few others? The immense increase in size of the Marie Louise (B) in the short interval of twenty-

one days, and after a period when I had supposed the fruit had reached its full size, suggests the means of ascertaining the period, differing in different fruits, when moisture should cease to be applied to the soil, and the roots be to some extent carefully protected from rain. And this is only one of many points in the same connection worth thinking about.—FRUIT EATER.

SKELETONISING LEAVES.

"WHAT are you doing so mysteriously, Mary," asked Marion, "with that pan of very dirty-looking water?"

"I am trying to make skeleton leaves," she replied.

"Oh, I remember, Mr. Hope said something about our trying that; but it has been forgotten, for we have found so very much to do this summer. I never felt so busy in my life."

"It is too late in the year, now," said Mary.

"Then why are you trying, if it is too late?"

"Oh I began more than six weeks ago, and this is only part of the method."

"Do tell us all about it," asked Margaret, "and then we can try next year."

"I shall be very glad to tell you, and show you all I can. I procured this large earthen pan and put into it a quantity of leaves. At first I thought any kind of leaves would do, but Mr. Sinclair told me that those of the Oak, Chestnut, Elm, Sycamore, and Walnut, which I thought would all make pretty skeletons, had so much resin in them that they would not decay themselves, and they would also prevent other leaves that were mixed with them decaying, because the resinous quality in them would affect the water; so I had to throw all those away, and lost some time. He then advised me as to the choice of leaves, and seed-vessels also, which must be gathered just before the seed is ripe. He wrote me out a list of leaves, and Harry and I gathered a quantity of those we could procure."

"Do tell us what they were."

"The leaves we gathered were those of the Poplar, Lime, Tulip Tree, the Apple, Pear, Apricot, Orange, Lemon, Box, Ivy, Holly, Magnolia, and Passion Flower. Then we added the calyxes of several plants, as the Nicandra, Campanula, Dictamnus, Mallow, Poppy, and several more; and also a few stalks of Cabbage, Flax, Hemp, and Stinging-nettle. We procured a good quantity of each, as that helps the decay."

"What did you do then?"

"We put them all into the pan, and poured a quantity of boiling soft water over them."

"Why boiling water?"

"Mr. Sinclair told us it would destroy the vitality, as he called it, and hasten the process. Then gardener put the pan on the top of this low out-house to be out of the way of the fowls, and that it might be exposed to the sun and rain."

"But did not the water dry up soon?"

"No, the rain filled the pan again several times; and Harry used to get up once a-week and stir it. Now gardener has taken it down for me, as I believe in six weeks some of the leaves are ready."

"And what are you going to do now? They look so messy and discoloured that I cannot imagine anything pretty being made of them."

"I will try one," and Mary put her hand into the discoloured water and drew out a Tulip-Tree leaf, which was already showing some of its fibrous formation, the green part having decayed and partly fallen away into the water; this leaf she held carefully by the stalk under the tap of the butt. The stream of water quickly washed away all the remaining fleshy decayed green part, and left the leaf a skeleton, to the great delight of the girls; then placing it carefully in some clean water, Mary tried another leaf with the same result. Now and then one gave them more trouble, being so tender that the force of the water broke it all to pieces; then Mary remembered Mr. Sinclair had told her that in this case she should lay the leaf on a little piece of board, and holding the two together between her finger and thumb, the stream of water would run over and through the leaf without breaking it. Some they found, even after this process, had little bits of green substance which would not come away; when it would not yield at all, even after being

carefully rubbed with the finger, they returned that leaf to the pan to be soaked some days, or a week longer. The process interested and amused them very much, and they had a good quantity of tolerable specimens thoroughly cleared of all the fleshy part, and were beginning to think of leaving off, when Herbert and Harry returned from their morning studies and joined them. Herbert, who knew what Mary was going to do that morning, had asked Mr. Sinclair what was to be done to bleach the leaves, and had been told what to procure at the chemist's in the village on his way home, and how he was to manage the process.

They now returned to the house, and went to the boys' play-room, anxious to see the whole. Herbert procured a hat-box, and tying some of the skeleton leaves to strings across the top, and placing some sulphur, which he set on fire, in a cup at the bottom, he shut down the lid and left it closed for the sulphur to bleach the leaves, which it would do gradually. On some of them he tried another experiment; he had procured a little diluted chloride of lime, and also chloride of soda; these he poured into separate shallow vessels, and immersed some of the leaves in each for a few minutes, and the party had the great pleasure of seeing the skeletons gradually lose their dirty appearance and become very white.—(*Churchman's Family Magazine.*)

CULTIVATION OF THE MELON.

(Continued from page 495.)

It sometimes happens that Melon plants are required with a stem a foot or more high, in order to bring their bearing shoots to the light. In this case the plants are prepared by pinching out the leader at the second leaf, as in *fig. 17*, by which a shoot is obtained that is better calculated to afford fruit from the side-shoots than were the



Fig. 21.

plant allowed to grow up without stopping, as shown in *fig. 21*, for judicious stopping promotes fertility by rendering parts active which would otherwise remain dormant.

The plant having been stopped, two shoots will arise from the axils of the leaves; the stronger should be retained and trained to a small stick, the other being cut clean out, and, as the shoot grows, at every leaf a tiny knob will show itself, which if left will elongate into a shoot. When of sufficient size, and that is when first seen, the knobs or shoots should be taken out with a pin or the point of a small knife, letting the leaf remain, for if removed, as in



Fig. 22.

fig. 22, the sap will exude from the cut footstalk and several ulcers may consequently be formed at the stem. The leaves which have been left, having no shoots springing from their axils, will die off gradually, and the sap they elaborate before they do so will strengthen the stem of the plant, and so much the more vigour will be thrown into the leading shoot. This will be apparent in *fig. 23*, in which all the side shoots are taken out of the axils of the leaves, but the leaves retained up to *c*.



Fig. 23.

If no more than one shoot is required, the leading shoot should not be stopped, nor the embryo laterals taken from the axils of the leaves any further up the principal shoot than to the height of stem required; but if more than one shoot is needed to cover the trellis after that height of stem has been attained, the principal shoot should be stopped to the requisite number of leaves, from which the same number of shoots will spring, and these are to be trained up the trellis at a foot apart, and not stopped until within 6 inches of the top of the trellis, when the shoot should have its point

pinched out. This will cause laterals to be emitted, there being some already at the base of the principal shoot which

must not be stopped but trained-in at their full length. These laterals will show fruit at the first, second, or third leaf, and after the flowers have been duly impregnated the laterals are stopped to three joints if there is no fruit on them, and if there is, to the joint above the fruit, let it be where it may; but the plant should not be stopped until after fertilisation has taken place.

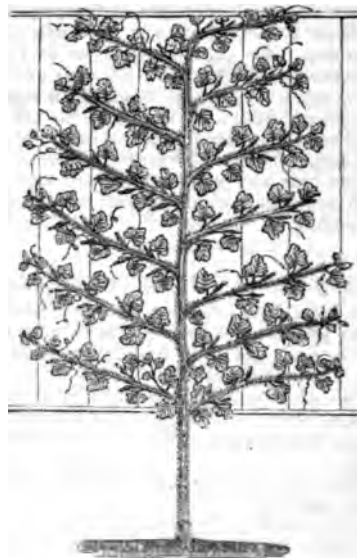


Fig. 24.

Prior to stopping, if the plant have one principal shoot, it will appear as shown in *fig. 24*, and when stopped the laterals will appear, as shown in *fig. 25*, *p p p*. After setting or stopping, sub-laterals will appear from the bases of the

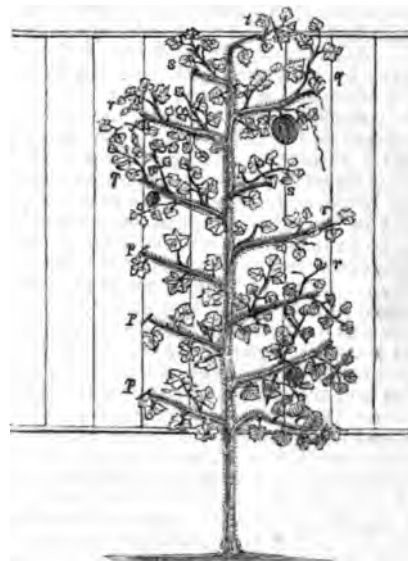


Fig. 25.

leaves retained, some with fruit at their base, *fig. 25*, *q q*, and others without, *r r r*. From a week to ten days after the fruit has set and is swelling freely, the sub-laterals will be of sufficient size to be stopped, or, if not, the right time to stop them is when they have grown to the extent of three leaves. Laterals not producing fruit may have the two upper sub-laterals removed, they will then appear as shown in *s*, and the one left be stopped a week afterwards to two or three joints, *t*. Those laterals producing fruit should have the sub-laterals below the fruit stopped to one joint, that by the fruit to three, and that above the fruit to three

presuming the fruit to be at the second joint; but if at the third joint, the first and second sub-laterals be shortened to one eye each, and that above the three joints. After this all the shoots from whatever they arise should be cut out if they crowd the main leaves, or be stopped to one leaf as fast as they themselves, until the fruit is ripe. If the fruit does not come on the laterals, the plant is to be treated in the manner as described in fig. 20, and fruit obtained, on sub-laterals as therein shown.

We now go through the training of Melons with a mass which I hope will make the subject plain even to the uninitiated, and I believe I am the first who has illustrated the training of Melon, and am the second to reduce the training of the Melon to a system. Our worthy coadjutor, Mr. Fish, was the first to treat the training of Melons on a system, all others merely giving vague recommendations to thin here, stop there, once the Melon in the hands of most is liable to either from the plants not setting their fruit, and its being before ripe, and not uncommonly the plants will moulder in disease or other cause before a crop ripens.

Fish's mode of training is so simple and yet so satisfactory in its results, that I do not hesitate to repeat it though it has appeared from time to time in this Journal. Mr. Fish thus describes his practice:—"As soon as the Melon plant has made three or four leaves or so, you cut its point. This in a short time will cause a shoot to come from the axil of each leaf. These will be the secondary shoots. As soon as we can see them we pick out all the secondary shoots except two (when two shoots are required), the point of a budding-knife or penknife for the purpose. One of the secondary shoots as it grows is trained to the back and the other to the front, or, if it please the practitioner better, a little advantage is gained by training both of that plant to the back, and both shoots of the plant to the front. As the shoot grows, every large shoot at every joint is carefully kept, but every young shoot forming at its axil is nipped out with the penknife so that these secondary shoots shall be clear of side shoots for from 15 to 18 inches from the main stem of the plant. After that the secondary shoot is allowed to grow without any side pinching; and when it is within 6 inches or so of the sides of the frame, back out, an inch or so is nipped off its point, at any rate so that when stopped there will be six or seven at the ends of the secondary shoots, from which the tertiary shoots in the axils of the leaves have not been extracted. After the points of the secondary shoots are stopped, these tertiary shoots will grow with great vigour, and most of them will show fruit at the first joint, when being nipped at the joint above the fruit there will be strength enough in the plant to set them successfully at once." If the secondary shoots do not show their first or second joint stop, that they may throw side shoots, which is necessary with some shy kinds in order to get them to show and set their fruit; "but in all better crops and more regular ones are secured, by the plan of early stopping and getting the space between shoots and twigs before a fruit can be induced."

pits when grown on trellises, or when so grown from the prefer taking the first primary shoot to the height of the trellis, stopping there; selecting the secondary shoots and training the same as above."

Fish thus points out the merits of the system—"It is of importance to get as many blossoms to open about the time as is desirable, so as to insure their simultaneous ripening."

G. ABBEY.

(To be continued.)

IONOPSIS PANICULATA CULTURE.

Ionopsis paniculata degenerates with me. I bought a plant two years ago with two spikes of lovely bloom on the next season two spikes were produced, but the flowers never properly opened. Last season one spike only opened, which refused to expand in like manner. The plant came to the very verge of opening, and then they

withered. Does the plant require any peculiar conditions of heat, moisture, shade? Is it considered difficult to grow?

I have *Gloriosa Plantii*, Is *Gloriosa superba* so much superior to it as to make it worth while to get this in addition to the former?—ORCHIDOPHILUS.

[We have made the inquiries needed of Mr. Williams, of the Holloway Nurseries, and this is his reply:—"The reason of *Ionopsis* degenerating, I should say, is through flowering this plant too freely before it was well established. The plant, I suspect, shrivelled at the time of showing flower, which is often the case with these small Orchids. The best remedy is, not to let them flower until the plant is well established upon the block by emitting plenty of good roots. This will insure good bloom. *Ionopsis paniculata* is a difficult plant to establish. There are a few plants that have succeeded well in this country, but not many. It being such a free-flowering plant causes it to shrivel, and when that happens it will most likely die.

The treatment we have found best is to place it on a block of wood with a little live sphagnum moss, and a good supply of moisture. In fact, when growing always keep it moist at the roots, and not in too much heat at any time—55° to 60° in the winter, and 70° to 80° during summer. Keep it shaded for it does not like the sun.

Gloriosa superba is superior to *G. Plantii*.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

PROCEED with the routine of trenching, draining, and all ground alterations suggested in previous calendars. Old gardens are often crowded with fruit trees. As light and air are more required for the important products of the garden than shade, take measures for removing all trees objectionable in this respect. Beans, if former directions have been carried out in making sowings of Peas and Mazagan Beans, a sowing of the Longpod Beans will be found to produce an excellent succession. They should be sown 4 feet apart. A second sowing may also be made of the double-blossomed Early Frame Peas. This variety of Pea is of greater service and better in quality than many of the newer kinds, it deserves a place in all gardens where choice vegetables are esteemed, and to grow them to perfection they should be allowed 5 feet between the rows. As severe weather, though long delayed, may yet be near, a few hints on the best means of preserving ice will be opportune. When filling the ice-house, it is not requisite that the ice be very thick, on the contrary, it is much better thin, if a sufficient quantity can be obtained. Before commencing to fill the old straw should be taken out, and fresh substituted for it; as the house is filled it should be placed round the walls a foot thick; as the ice is brought to the door it should be well broken, and then thrown into the house, when it should be beaten to powder, as on this depends its keeping well. On every layer of about a foot thick pour some boiling water which will cause the ice to congeal into one solid mass. It is by inattention to this particular, that there are so many complaints of houses not keeping ice well. After the house is completely filled, close the passage with straw; of course there will be a vacuity between the ice and the roof of the house, this must also be filled with straw.

FRUIT GARDEN.

If any transplanting of fruit trees has yet to be done, it should be seen to as soon as possible, as the weather is still favourable for such work, also see to getting ground intended to be planted with young trees prepared, and spare no pains or expense to have this properly done. Make sure of thorough drainage, and where all the subsoil is of one kind, this should be removed, replacing it with some good fresh loam.

FLOWER GARDEN.

Alterations should be proceeded with vigorously if they are in hand, if they include the removal of trees especially. Attend to the edgings of walks and beds, reset flints, and repair Box-edgings, rake worm casts from your lawns with a daisy-rake; where the grass is killed under trees in the pleasure ground, rake in strong manure, or apply manure water, to prepare the soil for grass seeds to be sown late in the season. Where any of the beds or borders require a

dressing of fresh soil, this should be provided. Fresh soil is, in most cases, preferable as a dressing for flower-beds to manure, which is apt to cause too luxuriant a growth for a first-rate display of flowers. On soils that are naturally poor, however, and where neither fresh mould nor decayed leaves can be had, a moderate dressing of well-rotted farmyard manure will be useful; but this should be well mixed with the mould to the full depth of the bed, and not carelessly turned in, and left in lumps near the surface, for in this case a gross habit of growth would be promoted early in the season, and as the principal part of the roots would be near the surface in the summer, the plants would soon feel the effects of dry weather, whereas if the manure is well incorporated with the soil to the depth of about 18 inches, no ordinary amount of dry weather will injure the plants after they are once fairly established. Pink and Pansy-beds should be examined, and all plants that are loose carefully fastened. The same remark applies to seedling Auriculas and Polyanthus. With respect to Ranunculuses lose no time in making what purchases may be necessary. Anticipating the approach of winter, with its usual inclement attributes, cautions have been given and directions repeated, for the protection of plants liable to be affected by frost. The exercise of forethought is demanded of a gardener in every operation he undertakes. To avert by precautionary measures the evil consequences that result from unfavourable circumstances of climate, is a duty that our climate renders imperative.

GREENHOUSE AND CONSERVATORY.

While the weather continues fine and mild allow the plants in these structures the full benefit of it, by the admission of abundance of air during the day. Fumigate on the first appearance of green fly. See that the worms do not remain in quiet possession of their pot lodgings, and remedy any defects that exist in the drainage of plants in pots. The principal object should be to guard against plants commencing growth at this unfavourable time of the year, and to keep in check damp and mildew, which the weather we are now experiencing is likely to induce, more especially in the case of plants that are at all delicate, and such as have imperfectly ripened their wood. To assist in promoting a free circulation of air through plant-houses, some of the inferior duplicates might now be removed to spare vineries or other quarters, for anything approaching a crowded state among plants will be sure to cause at least a partial loss of foliage.

STOVE.

A little advance in temperature may be permitted here at present. Wait for an increase of light, without which all applications of heat and moisture will be vain. Let 60° without sun be the maximum. Some of the Orchids—such as the *Laelias* and *Cattleyas* will commence rooting, let them have attention and encouragement. The *Cymbidium sinense* is a most useful plant for the drawing-room, the scent is most delicious. A thorough baiting for snails and vermin should take place previous to potting.

FORCING-PIT.

Keep up a regular succession throughout the season by bringing forward stock as wanted. Roses, both dwarf and standard, Honeysuckles, hybrid Rhododendrons, and Azaleas, with a host of other things, in addition to the usual occupants of the houses, will enable cultivators to make a brilliant show. Hyacinths, Narcissus, Tulips, Lily of the Valley, and other plants of the above class must be duly forwarded as wanted. A day heat of 60° or 65° will suffice at present, sinking at night to 50° or 55°. Fumigate occasionally to keep down green fly.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE weather has been very variable. Within a few hours we have had frost, thaw, snow, and mild weather following each other, and now, on Thursday evening as we write, with a rising barometer, we have one of the most telling rains of the season, which will rejoice many in this neighbourhood. Work was regulated very much accordingly. Dung and decomposed material from the rubbish-heap which we are

forced by necessity to make the most of, were wheeled on frosty mornings and one frosty day on quarters of the kitchen garden and on to flower-beds, previously ridged up. Ground was also turned up and ridged, which we consider to be a good plan with all ground that is at all stiff with a clay bottom. This turning and loosening the subsoil, and just getting up a little of it to mix with the surface soil, we consider to be a fine thing for the generality of culinary and flower-garden plants. By such means there is little chance of exhausting the ground, or making it sick of cropping, if rotation of crops is duly attended to.

In trenching or ridging care should be taken to move and break all the soil, except that which forms the ridge, as the frost and the influence of the atmosphere will generally do that well enough. We have known large lumps and widths of soil tumbled into the bottom of a trench, and also good spaces left in the middle untouched, just as if the object had been to follow the lazy-bed system represented at page 6. If the ground is turned up when dry, and also levelled down again when dry, there will be no trouble from excess of moisture in deep regularly-stirred land, whilst the very depth will also secure from overdryness in drought. When men dig, or trench, or ridge in slushy soil, or turn into a trench with mattocks and levers great lumps and breadths of frozen earth, it would be more economical policy to pay them to let the work alone, if there were nothing else to do. Just let any one turn down such frosted earth, and note how long it is before the heat of spring brings it to the general temperature. If people will pick up such frosted ground we would advise leaving the huge blocks on the surface piled as openly as possible; then the toughest soil would be pulverised. The pulverising of such blocks, when no better job can be obtained, is a very different thing from turning frozen lumps into a trench, and placing unfrozen soil over them.

Chalk obtained from sinking a well we had spread out, so that the lumps might be well cracked by the frost, and then threw it along the ground, ridged up, intended for Carrots next season; and if there is much more frost the lumps of chalk will be well powdered before sowing-time. For all stiff land chalk or other calcareous material operates very beneficially, and is especially valuable in old gardens for Carrots and plants with similar roots. It makes such land opener and drier. In the case of light sandy soil the chalk renders the land more retentive of moisture. Even in heavy land it is amazing how soon chalk goes to the bottom of the stirred soil. Many years ago we dressed part of the garden with chalk, but we lost all traces of it for a number of years, until we trenched it up deeply, raising even a little of the subsoil last year for Carrots, and from the bottom we returned to the top some of the chalk applied long ago. It is a great advantage when from sinking a pit or well the subsoil can be used to ameliorate the texture of the surface soil.

Routine work has chiefly been confined to protecting and uncovering Asparagus, Radishes, and Cauliflower, the heads of the latter coming in for use being much attacked by mice; sowing Peas in pots; planting Potatoes in pots; putting up a dung-bed, but chiefly tree leaves, for raising young Cucumbers, &c., to succeed those now in the pit; planting Kidney Beans, and soiling another piece of a Mushroom-bed. Celery has had the heads uncovered in fine days. Took up also a little more Sea-kale and Rhubarb for the Mushroom-house. In wet weather cleaned pots, made and repaired straw covers, and cut up wood under cover for furnaces.

FRUIT GARDEN.

Pruned and nailed in suitable weather. Protected the roots of trees in pots from the frost, placing them close together on purpose. Looked over Grapes, some of which are now getting the worse for wear. Watered Strawberry-pots in orchard-house, as, if the roots become too dry, the bud is apt to suffer. Gave also a little water to pots in small Vine-pit. Put some hot leaves on a part of a Vine-border. Prepared for washing trees in orchard-house, and as soon as practicable will thin and prune trees in small orchard. As soon as possible will wash low standards with soot, lime, sulphur, and clay, to keep the birds from the buds, and to smother all insects' eggs.

The ground is now in capital order for planting. The rains we have had will make it just moist enough; before it

came it was still over-dry. In forcing, no time should be lost in starting Vine-buds that are intended to fruit next season. A hotbed is the best place for them. An outline of treatment was given the other week. To have Melons in the end of April and beginning of May, a few seeds should be sown in a sweet hotbed. The seeds should be sown thinly, and protected from mice. When this protection can be given we prefer sowing two or three seeds in a small pot, the smallest above a thumb size, and then leave the best one to grow, allowing only one plant to a pot, and giving it a larger pot as it needs it, until planting-out time. In such a hotbed Melons when young generally do better than when grown in houses or pits heated by hot water. Cucumbers may be raised anywhere, but young Melon plants dearly like the smell of the hotbed. When we had plenty of manure we have gathered as fine Melons in the first week in May from wooden frames, as we have ever done with the assistance of hot water. Of course, there was a considerable amount of labour in banking up fresh material round the boxes, and we would rather say nothing of the quantity of material we used, which all came in useful in the spring and winter months.

We have no objection, quite the reverse, to hot-water pipes, even a flue, or a brick or iron stove, but we do like to see a range of old-fashioned dung-beds, as it tells us that the means will be at hand for securing succulent Cabbages and Cauliflowers, and sweet, crisp Celery. Some of us were so enraptured with hot water, as to despise the old useful hotbeds, and we may wish and wish again, and wish in vain, for a good dressing for a Cauliflower quarter. The young gardener will act wisely in securing the means for these hotbeds, never forgetting that a part of their usefulness is only beginning when they have served the purpose for which they were first made.

Figs to be ripe in May should now be started with a temperature of 45°, increasing gradually in a month to 55°, sprinkling the shoots gently in sunny days. Peaches may also be started at the same temperature, keeping the house rather moist until the flowers begin to open, raising the temperature gradually from 45° to 55°, and not allowing it to rise above that limit at night by artificial heat, until the fruit is set. Vines, start in a similar temperature, increasing in three weeks to 60°, and not going above that with artificial heat until all the buds are showing nicely. In all these cases, provided air is given early, there may be a rise of from 10° to 15° or 20° by sun heat, and the shutting up of the houses early so as to enclose a good amount of sun heat, will be better for the plants, than more fire heat, or more air. Vines in pots will do best when started in a mild bottom heat. If put into a bed at first with fresh fermenting horsedung, and care taken that the roots are not too much excited, the fumes from the dung will render all washing and painting of the plants unnecessary; but these fumes must be as sweet as to suit a young Cucumber plant before the buds break, or they will be injured to a certainty. We have had dormant Vines for three weeks in such a steaming atmosphere from horsedung, that you could not see your finger before you at an arm's length from the eye, but the steam and vapours were quite sweet before the buds broke, and they broke all the stronger in consequence. Than such a steaming, not in winter, but in spring and autumn, we have found nothing better for eradicating scale from Pine plants; but if bug make its appearance, washing must be resorted to in addition, as the woolly covering protects them, and if at all distressed, they would find their way to the roots, where nothing could be done with them except shaking away all the earth, and carefully washing the roots.

ORNAMENTAL DEPARTMENT.

Mahonia aquifolia.—Prepared for planting for cover and timber, as it is quite possible to secure both objects. Our chief object, however, for mentioning this is for ascertaining from the experience of our coadjutors and readers how the *Mahonia* or Evergreen Berberry withstands the attacks of hares and rabbits. We have ourselves seen great lots of this plant quite untouched, when other trees and shrubs, except *Rhododendrons*, were much nibbled and barked. We have, therefore, recommended it largely to gentlemen for undergrowth; but two years ago we planted a little piece for undercover, the plants being if anything rather small,

and that may have been the cause of the disaster, but not a single plant was allowed to grow. After being repeatedly nipped over, and pushing out again from the bottom, the young shoots were served in the same way. We dressed them with material not very pleasant, we thought, to any eating thing; but notwithstanding bad taste and bad smell, away the shoots went as soon as they were formed. It might have been all in sport; for though cut over to the ground we do not think that much of the plant was eaten. At any rate, every plant was cleared, and we do not suppose that it would have been possible to have kept them, unless we had presented something to the destroyers more gratifying to their palates or more tickling to their propensities for fun. Thinking of planting on a larger scale, we would be glad to know the experience of others in this matter, as the above is almost the only unfortunate result that has come under our observation.

Planting and Transplanting Ornamental Trees and Shrubs.—These may now be planted and transplanted with better chances of succeeding in many places than if the work had been done earlier in the winter where there was a scarcity of water, and where the ground was too dry to permit of planting being done to any great extent without watering. Now the ground is just moist enough from showers to render much watering unnecessary. In transplanting large trees and shrubs two plans may be followed. By the first, the plant is cut round, say 3 feet from the bole, a year or two years before removal, and the tap-root also cut. This causes a mat of fresh roots to be made all round the ball, and if the ball is moved carefully the transplanted tree can scarcely fail to grow well. By the other plan, a ball, though useful, is of less consequence, but it is of consequence to trace out and secure as many of the roots as possible, and as long as possible, and then these are to be spread out nicely, and secured in the fresh soil. In either case the too general custom of inundating such roots with great quantities of water is an injudicious one, as, instead of assisting the main roots to make fresh rootlets, the cold produced by continuous evaporation from the soil prevents fresh rootlets being formed, even when the sun, striking upon the swelling buds, makes a demand on root-action which from cold they are unable to supply. If in planting such roots are merely damped, or are dipped a few minutes in water, and then the naturally dampish earth firmed well about them, the roots as well as the top of the tree will partake of the stimulus of increasing heat, and fresh rootlets will be freely formed. Whilst they are merely forming, instead of deluging the soil with cold water, if the favourite tree or shrub shows any sign of distress, it would be better to sprinkle the top with water, or even give a little shade. In particular cases the ground might be mulched in cold weather, and at night, and uncovered in sunny days to let the ground become warm. In planting out favourite trees and shrubs from pots, the earth should be mostly shaken away, and the roots nicely spread out, and packed, and very moderately watered, keeping dry earth on the surface to prevent rapid evaporation. Such plants should also be securely staked, placing the bottom of the stake some inches from the bole of the plant. If the plant is at all tender, or the place exposed, a few evergreen branches fixed securely round it, but at a safe distance for the first winter at least, will be a great advantage. In poor, thin soils, such trees should be placed on hillocks, and the diameter of these may be increased as the roots extend.

As to houses, pits, air giving, &c., see previous weeks.—R. F.

TRADE CATALOGUES RECEIVED.

S. Ponsford & Son, Loughborough Park Nurseries, Brixton, Surrey.—*Select Retail Catalogue of Kitchen Garden and Flower Seeds.*

P. Robertson & Co., 33, St. Andrew Square, and Trinity Nursery, Edinburgh.—*Sower's Guide, a Descriptive Catalogue of Kitchen Garden, Flower, and Agricultural Seeds; Selection of Gladioli and other Bulbs.*

Carter & Co., 237, 238, & 261, High Holborn.—*Gardener's and Farmer's Vade Mecum. Part I., Flower Seeds and Plants. Part II., Vegetable and Agricultural Seeds.*

COVENT GARDEN MARKET.—JANUARY 7.

The supply, both of fruit and vegetables, continues good, and that of the rougher kinds of both is still heavy. Apples and Pears consist of the same varieties as mentioned in previous reports, and Grapes and Pines are sufficient for the demand. Importations of salads from abroad are now frequent, and comprise Cabbage Lettuce, Endive, and Barbe de Capucin. Other forced vegetables consist of Kidney Beans, Sea-kale, Asparagus, and Potatoes, the last of which may be had for 2s. 6d. per pound. The Potato trade is still heavy and supplies large.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	2	0	Melons.....	2	6	4	0
Apricots.....	0	0	0	0	Mulberries... punnet	0	0	0	0
Cherries.....	0	0	0	0	Nectarines.... doz.	0	0	0	0
Chestnuts.....	14	0	20	0	Oranges.....	5	0	10	0
Currants, Red... doz.	0	0	0	0	Peaches.....	0	0	0	0
Black.....	0	0	0	0	Pears (kitchen)... bush.	5	0	10	0
Figs.....	0	0	0	0	dessert.....	1	6	4	0
Filberts.....	100	lb.	40	0	Pine Apples... lb.	6	0	9	0
Cobs.....	70	0	80	0	Plums.....	0	0	0	0
Gooseberries... doz.	0	0	0	0	Pomegranates... each	0	6	1	0
Grapes, Hamburghs lb	3	0	8	0	Quinces.....	0	0	0	0
Muscata.....	6	0	10	0	Raspberries... lb.	0	0	0	0
Lemons.....	100	5	0	10	Walnuts.....	14	0	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	0	0	0	0	Leeks.....	0	2	0	3
Asparagus.....	10	0	15	0	Lettuce.....	0	2	0	0
Beans Broad.....	0	0	0	0	Musbrooms....	1	6	2	6
Kidney.....	100	2	0	3	Must. & Cress, punnet	0	2	0	0
Beet, Red.....	1	0	3	0	Onions.....	4	0	5	0
Broccoli.....	1	0	2	0	pickling.....	0	6	0	0
Brussels Sprouts doz.	2	6	3	6	Parsley.....	4	0	6	0
Cabbage.....	1	6	3	0	Parsnips.....	0	9	1	0
Capiciums.....	100	0	0	0	Peas.....	0	0	0	0
Carrots.....	0	5	0	8	Potatoes.....	2	6	4	0
Canflower.....	2	0	6	0	Radishes doz. bunches	0	9	1	0
Celery.....	1	0	2	0	Rhubarb.....	0	9	1	6
Cucumbers.....	1	6	3	0	Savoy.....	1	0	2	0
Endive.....	0	6	3	0	Sea-kale.....	1	6	3	0
Fennel.....	0	3	0	0	Splnach.....	3	0	5	0
Garlic and Shallots, lb.	0	8	0	0	Tomatoes.....	0	0	0	0
Herbs.....	0	3	0	0	Turnips.....	0	3	0	0
Horseradish... bundle	2	6	5	0	Vegetable Marrows doz.	0	0	0	0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

MUSCAT HAMBURGH VINE (*Lincoln*).—We have this on its own roots planted out in an outside border, and this year fully one half the berries shanked. It does very fairly planted in an inside border; but it is even then more liable to shank than any Grape we know. Grafted on the Black Hamburgh it is not liable to shank, and unless it be so grafted, we do not recommend it for planting in an outside border; and we think you will be acting wisely to plant Black Hamburgh Vines, and inarch the Muscat Hamburgs upon them after both have started into growth. (*J. S. A.*).—Write to Mr. Pearson, nurseryman, Chilwell, near Nottingham, who has grafted this variety largely on the Black Hamburgh, and who has a large stock of plants for sale. You cannot grow it successfully on its own roots.

LIKEWASH FOR CURRANT BUSHES—PEAR LEAVES SPOTTED—STRIKING EVERGREENS (*Bank Clerk*).—Mix equal quantities of lime, sulphur, soot, and soft soap with sufficient tobacco water to bring the mixture to the consistency of thick paint, and paint the trees from the bottom upwards, brushing the mixture into every hole and crevice. Do this before the buds begin to swell, from November to February being the best time. The Pear leaves are browned through the dryness of the ground, your limestone oil not probably being suitable for the stock the trees are worked upon. Your remedy is to manure well with cool manure, as cowdung, and to mulch the surface in summer in order to diminish evaporation. Cutting of evergreens are best put in about the end of September or beginning of October.

TREMENDRA CUTTING DOWN—REPORTING CRASSULA COCCINEA (*H. E.*).—Report the Tremendra in March, and cut it down a month afterwards, leaving a few inches of the young wood. The Crassula may be potted at the same time, in a compost of equal parts of turfy peat, turfy loam, and leaf mould, with a free admixture of sand, and pieces of charcoal about the size of a hazel nut, in quantity equal to about one-sixth of the whole.

LINKING HOTBEDS (*Humdrum*).—See "Doings of the Last Week." There is the advantage that the part sunk is not exposed to the cold winds; and if the sun can reach the glass as well there is no disadvantage whatever, provided the edges in the hole, and linings can be given if necessary.

SALVIA MEMOROSA—EVERGREENS (*B. B.*).—We do not know where you could purchase plants of *Salvia nemorosa*, which is so valuable for bees. Perhaps some of our correspondents can furnish the information. If you send your address we may be able to put you in the way of procuring a few plants. *Colletia bicondens*, *Cotoneaster Simmonsi*, *Chamaebatia foliol*, *Berberis Darwinii*, *Euonymus japonicus aureo-variegatus*, *marginata*, and *ovatus aureo-variegatus*; *Aralia Sieboldii*, *Aucuba japonica* var. *Ceras*, *laetianicus myrtilifolius*, and the variegated form of the common *Laurel*; *Ligustrum glabrum*, and its variety *aureo-variegatum*; *L. japonicum*, and its gold-leaved variety; *Raphiolepis ovata*, and *Skimmia japonica*. In addition to these there is a great variety of *Hollies*, *Box*, and other evergreens, as *Laurustinus*, *Berberis*, *Arbutus*, *Cotoneaster*, and many others. The beautiful varieties of *Osmanthus ilicifolius* are new and very fine.

RADISHES FORCING—LAWN GRASS SOWING (*J. A. H. S.*).—You may sow Radishes in any light rich soil, either on a slight or moderate hotbed. Give plenty of air and all the light possible, a temperature of from 50° to 60°, and in watering let the water be of the same temperature as the air of the frame. Cover the sashes at night and in frosty weather. You may sow grass seeds in March or April whenever the ground is in good condition; but the end of March or early in April is generally the most favourable time. A good lawn mixture should contain *Trifolium repens*, the White or Dutch Clover, also the Small Yellow Clover, *Trifolium minus*; but without knowing the nature of the soil and situation it is impossible to say what the proportions should be. You had better consult some of the seedsmen who advertise lawn mixtures in our columns, and you will probably be able to obtain a suitable mixture at a cheaper rate than you could make it yourself ordering each grass separately.

HEATING A SMALL GREENHOUSE (*Cestrea*).—We are sorry that you are in such trouble with your iron stove. We really think you should try and regulate it so that it should not give out so much heat. All that we have met with are easily regulated by the opening at the ashpit pan. The pipe going along the back wall must be an advantage. If the heat is so much, you might place a plug in the end of the pipe, with two or three half-inch holes in the plug, to let a moderate current of heated air out. The opening in the pan of the ashpit, however, is the great regulator. We advise you to try such modes, and a pan of water over your stove, before incurring greater expense. We have not seen Mr. Walker's gas hot-water apparatus, but we have no doubt it would answer if properly attended to, whether set outside or inside. Before making any change in this respect, read what Mr. Fish says about heating such a small house, by a small flue beneath the floor or path. If you make a furnace outside low enough, the bricks and tiles for the flue would not cost much; and, to save the expense of a brick chimney, you could have lengths of hard-burned earthenware, some 7 inches in diameter, though 6 inches would do. Near a dwelling-house this simple plan does away with all filth in the house, and in cold damp days the pathway is nice for the feet, and no appearance of a heating medium is to be seen. We have no objection to your planting three Vines in the way you propose, and then dividing each into two main stems as they enter the house; but if you do so you will not do much good with plants in your house in summer. You may, however, have these six stems of Vines in an 18-foot house, and keep the house filled all the winter and early spring with bedding and other plants. You would need at least 36 feet of three-inch piping for such a house, and, unless gas was cheap, that would be no joke. We think gas is best applied to very small houses. Before the Vines cover the roof you might have about ten trees in pots—say four Plums, four Peaches, and two Figs; but, after the Vines pretty well cover the roof, you will not do much with these pots, unless the Vine-stems are 6 feet apart. None of these things will ripen their wood, and perfect their fruit, without plenty of light. You might keep Plums, Cherries, &c., in these houses until the fruit was safe, and then place the plants out of doors; but then you must take care you do not give them a check, or that will neutralise all your labour.

CONSERVATORY ARRANGEMENTS (*M. E. G.*).—We fear you are attempting to grow too great a variety of plants in one house, for if you plant eight Vines as you propose, and train them up the rafters of the house, they being only some 4 feet apart, you will not be able to grow Peaches or Cherries successfully under them, nor would the flowering plants do very well trained to an east wall in such a house, nor the Fig thrive on a north wall, though it would do as well as most things in such a position. Of creepers, according to your proposed arrangements for the pillars, *Bignonia jasminoides*, *Mimosa prostrata*, *Jasminum gracile*, *Rhynchospermum jasmynoides*, *Sollya linearis*, *Lonicera fragrantissima*, *Mandevilla suaveolens*, *Kennedya ovata*, *inophylla*, *coccinea*, *monophylla*, and *Marryat*; and *Lapageria rosea*. Of these some are sweet-scented others not. Of Grapes, have two Black Hamburgs, two Lady Downes, two West's St. Peter's, and two White Tokay or Muscat of Alexandria. The best of Figs is the Brown Turkey or Lee's Perpetual. The plants you name for covering the east wall are as good as any; they may do fairly, and as for Peaches and Cherries you will be better without the latter, and if you have the former they should be either pyramids or bushes in pots. Peaches and Nectarines would do very well for the first two or three years, but not so well after the Vines cover the roof, for they would shade the Peaches too much. Neapolitan Violets, bulbs, &c., would do very well along the front. We caution you against attempting too much. Have the Vines and a few plants, and do them well.

CROQUET LAWN LEVELLING (*A. M. S.*).—Now, when the weather is mild, is as good a season as any to level a lawn. Your proposed plan of paring off the turf and filling up the hollow places, is right, only do not pare the turf too thin in taking it off, for it might kill the grass. If the surface be very uneven it would be the best plan to unturf the whole space required to be made quite level, and to level it and then relay the turf. The turf should not be taken off thinner than 1½ inch. By only taking up the turf in the hollows and filling up these with earth, it is quite as likely that the fresh soil will settle considerably, and the surface be but little more even than before, besides in patching it is seldom that the new will unite well with the old turf. Unless the hollows are very low a little soil put there so as to bring them level with the general surface would not be bad, and to sow the places with seeds in March; but if the lawn is very uneven the best plan would be to take off the turf from the whole, level the soil and relay the turf. You may proceed with either mode in open weather until May; but the earlier the work is done the less necessity there will be to water in dry weather. The "Cottage Gardener's Dictionary" is a good work of reference. Either it or "Thompson's Gardener's Assistant," we think would suit you.

THE WALKER (New Forest).—We believe Mr. Beaton mixed the lime with the stones, &c. This foundation mixture was put in deep, and then consolidated by watering and rolling until only 1 inch deep.

WINTERING DOWN BLOOMING (N. C., Nenagh).—A cold frame, protected from frost, is the best place for them. Divide the roots in wintering them in the cold frame until the young suckers become red. For flowering in October they should not be stopped after the 1st of June.

THE VINEY (Tyro).—One Vine will be enough, especially if you do not wish to increase the length, which we should recommend you to do. Choose the Black Hamburgh, procure your plant at once, plunge it in a tub of water, and plant in the first fortnight of June. The "Vine Manual" will tell you how. We should prefer the "Vine Manual" sheet glass to that which you name.

THE GARDEN PLAN (M. P.).—If you made a geometric garden in the shape of a square, we think the present flower-border is dispensed with, unless a similar border is made on the opposite side next the kitchen garden, so as to conceal it, which would be helped by an evergreen hedge there, or wall, or other boundary. We leave the sides open next the gravel walk in front of the houses, not undertake to give plans for flower gardens, but merely to those sent, which we will be glad to do in your case. You will find hints as to the mode of filling such squares in our engravings of the "Vine Manual" and in our little manual of "Flower Gardening" (which you can have free by post for five stamps), such as half of the garden in the manual No. 3, the central part of No. 5, or, for the end part of No. 6.

HOUSE CONVERTED TO A GREENHOUSE (E. H.).—1. Having a lofty warehouse, we do not see the necessity for cutting down that wall in height at back. Why not have had it 16, or 18, or more feet, all was there, and left the wall in front a foot or two higher? Then it would have been longer and steeper, the latter being good for late or early Grapes. 2. The sunk path in front will now be useful in getting at the Vines over the pathway. If the front wall higher than the sunk pathway might have been dispensed with, and the front made right across the house. 3. In that case you might have had the front of the house, and also at the back of the house; close as 2 feet apart, you would obtain no fruit against the wall, the upright part of the Vines in front, after the roof was covered, also plant only one set of Vines near the middle of the house, single stem up to the trellis and then divide it taking one stem to and one to the back, and these respectively may be spurred with 1. You seem to plant two sets of Vines behind and near the path, see no difficulty in spurring them from the ground to the trellis, along the roof; but the spurs on the lower part of the stem will not be so long as the roof from that part to the front of the house is high. 5. The whole mode of fixing and strengthening the roof is the same as the patentee does not come across you. 6. The mode of heating is also good and simple. 7. We are glad your improved Kiddean-heating answers so well, but were not quite prepared to learn spurring of a sluice in the sunk path would so effectually heat the cold part of your house. We think that would be still more done were you to open a similar sluice or ventilator at the highest division between the two houses. This system is nicely similar heated and cold houses, by Messrs. Lane, of Berkhampton.

THE FORCING (H. Rose).—First-rate Peaches have been grown by the common brick flue. The soil of many gardens will grow well. In planting such nice new houses it would have been advisable to lay the subsoil, and place 20 inches of fresh soil above it, such as you have collected, but with very little of the manure you use in it. It is better to give that when needed by top dressings. The outside are all right, with, perhaps, the exception of having dung; but your employer should have allowed you to take up the trees that were planted in 1860, and replant them properly in; and a smaller border, or none for the first year, would have done. The heat you have by hot water ought to be ample, and you seem plenty of means of ventilation. To prevent mildew we can only do air-giving early, plenty of it, and heat given in proportion, and hot-water pipes with sulphur and lime. We fear you have black sulphur and softsoap too strong and too early, and, perhaps, why use black sulphur, or what is called so, when true yellow sulphur are so easily obtained? You had better syringe your trees, and that will ease the buds. We knew an instance of Vines being killed by an application of sulphur vivum, softsoap, and a too warm a state. We have little doubt as to the Vines doing in your climate do not mix much dung with the soil.

THE FRUIT (Belton).—No. 1, 2, 3, 4, Christie's Pippin; 5, London 1, 19, 20, 21, and 22, all the same, but not recognised; 12, and 13, Idina; 24, Royal Russet; 28, Hurrethouse; 31, Cockle Pippin; recognised.

RY, BEE, and HOUSEHOLD CHRONICLE.

BRAHMA POOTRAS.

I am sorry to see so many disputes as to whether those are a pure breed or cross-bred with the Cochins, &c. are stubborn things. There are two gentlemen in the borough of Barnstaple, who have resided at and one of them, Mr. Tanner, kept them there even years since. Many years ago I saw him looking at a Brahma, of Miss Watts's breed, he remarked, "ve Brahmas here. I kept them for years in Brahma country there are some grey, others nearly white, buff and white."

The other gentleman, Mr. Falconer, tells me that they are in Brahma as common as the barn-door fowl in England.

If any one would call on me, I would with pleasure introduce him to those gentlemen, who are prepared to prove those birds derive their name from their native place, however they may be imported into England.—H. LEWORTHY, Newport, Barnstaple.

[We are exceedingly obliged by this communication, which fully sustains our opinion that the Brahma Pootra is a variety of the Cochins-China. Mr. Tanner says that in Brahma, usually known as Birmah, or the kingdom of Ava, there are Buff Brahma Pootras, and White Brahma Pootras, and no ornithologist could point out a specific difference between them and Cochins-China fowls. These are known to be natives of China, and the products of China find a large market in Birmah, which is its near neighbour. Chittagong, we may observe, is one of the boundaries of Birmah.]

WEST CUMBERLAND POULTRY SHOW.

THE seventh annual Show of Poultry, Pigeons, Rabbits, and Canaries was held on Wednesday and Thursday the 28th, and 29th, of December, in the Oddfellows' Hall, Whitehaven, and a more successful Exhibition was certainly never held under the auspices of the Society. The liberality with which the Committee's appeals for subscriptions was responded to by the public made it practicable to offer £40 more in cups and money than last year, the effect of this being an increase of entries to 491, or 141 more than last year. Both as regards number and quality the Show was a decided improvement on any previous year, the liberality of the prizes having drawn exhibitors from many distant parts of the kingdom, our local fanciers having thus opportunities of comparing the merits of their stock with the best models. The labours of the Committee and Secretaries must have been very great, and too high commendation could not be given to the two latter (Mr. E. Fearon and Mr. Lyon) for their indefatigable exertions in reducing the classes to order.

For the silver cup given to the best Game cock (confined to West Cumberland) there were eighteen entries, the first prize being won by Mr. John Mitchell, Egremont, Mr. Gunson, of Sandwith, however, running him very close. For the silver cup offered for the best Game cock (open to all England) there were sixteen pens of birds shown by some of the most famed breeders in the kingdom. There was also a very fair show of Game cockerels. There were not many *Bantams*, but the specimens shown were excellent. The Gold and Silver-laced *Bantams* were also comparatively few in number, but it would be difficult to conceive anything more perfect than were some of the birds shown. The prize pen, shown by Mr. Roy, of Kelso, were priced at £500, and though this of course was a "fancy" value, there is no doubt they would fetch a very high sum. There were sixteen entries of *Cochins-Chinas*, and a better lot could scarcely be got together. The Golden and Silver-spangled *Hamburgs* were a very numerous class, almost every bird being a model of this useful and ornamental class. The odd-looking *Black Spanish* were also represented well both as to quality and quantity. In *Ducks* there were some perfect marvels, a *White Muscovy*, shown by Mr. Sisson, weighing 13 lbs. There was also a pen of *Harlequin Ducks*, which surprised every one by the beauty of their plumage.

Perhaps the greatest advance upon last year was observable in the Rabbit class, some of those shown being perfect monstrosities in those particular points which delight fanciers' eyes. *Pigeons* were well represented, some of the pairs being of great value. The pair of *Turbits* which won the first prize in this class were pronounced by the Judge as fit to go anywhere for competition. One pair of *Nuns* were remarkably perfect, but the quick eye of the Judge detected that they had been clipped, and they were consequently disqualified. There was really a large number of *Fantails* and *Almond Tumblers*, perfection being very nearly reached in these classes. There were also several excellent pairs of *Owls* and *Mammoth Runts*.

Canaries were considered rather short in number; there were some very perfect specimens shown, however, the bulk of this class having been bred by local fanciers. The cynosure of the ladies' eyes, however, was undoubtedly the stand

of eggs, and the array of silver prizes which surmounted it, Mrs. Wood, of Sandwith was the successful competitor for the handsome egg-stand offered for the best dozen eggs, this being her second victory in this line, on both occasions with eggs laid by the same hen—a cross between Game and Black Spanish.

It is almost impossible that every one can be satisfied with the award of prizes in every class; and it is therefore very seldom that complaints are publicly noticed. In connection with the present show, however, there is one matter which seems to be worthy of the consideration of the Committee. It is assumed that the object of confining some of the prize cups to West Cumberland is that of encouraging local breeders, and a complaint urged during the show was, that some of these prizes had been awarded to birds obtained from breeders at a distance. The reply is that West Cumberland ultimately gets the advantage; but the parties aggrieved are not satisfied with this answer, and contend that if the object of the prizes be as above stated, such prizes should be given only to birds not merely the property of but bred by breeders resident in the district.

It was a pretty general remark that if the society's success should continue in the same ratio, there will not next year be any room in the town sufficiently large for the show. This, however, is a matter which may safely be left in the hands of so able a Committee, and we trust that they will not relax in their efforts to provide an Exhibition which, though to some merely an amusement, is to others a means of instruction, and to the community at large an undoubted benefit.—(*Cumberland Packet*.)

The following are the awards:—

SINGLE COCKS.

GAME (Confined to West Cumberland).—First and Cup, J. Mitchell, Egremont. Second, J. Gunson, Sandwith, near Whitehaven. Third, J. Wilson, St. Bees. Highly Commended, J. Brough, Carlisle. Commended, S. Sherwen, Whitehaven.

GAME.—First and Cup, A. Ashburner, Ulverston. Second and Third, J. Fletcher, Stoneclough, Manchester. Fourth, A. B. Dyer, Madeley, Salop. Highly Commended, Miss K. Charlton, Manningham, Bradford. Commended, J. Gelderd, Colliercliff, Kendal; J. Hodgson, Bradford. *Cockerels*.—First and Cup, R. Pickering, Carlisle. Second, M. Billing, jun., Erdington, Birmingham. Third, A. B. Dyer, Sandwith, near Whitehaven; J. Wallis, Wigton. T. Robinson, Carlisle. Highly Commended, T. Dyson, Halifax.

GAME BANTAM (Confined to West Cumberland).—First and Cup, J. Nalle, Frizington, near Whitehaven. Second, H. J. Nicholson, Whitehaven. Third, W. Cooper, Hensingham.

BLACK SPANISH (Confined to West Cumberland).—First and Cup, J. Gunson, Sandwith. Second, W. Cooper, Hensingham. Third, J. Bowman, Workington.

SILVER GREY DORRINGS (Confined to West Cumberland).—First and Cup, E. Fearon, Hensingham. Second, W. Cooper, Hensingham. Third, J. Towerson, Whitehaven.

GOLDEN SPANGLED HAMBURGERS (Confined to West Cumberland).—First and Cup, E. Fearon, Hensingham. Second, J. Wilson, St. Bees. Third, S. Jefferson, Whitehaven. Highly Commended, S. Jefferson; J. Wilson. Commended, W. G. R. Jones, Whitehaven.

GAME (Black-breasted and other Reds).—First, J. Gelderd, Kendal. Second, M. Billing, jun., Erdington, Birmingham. Third, H. Thompson, Milnthorpe, Westmoreland. Commended, J. Brough, Carlisle.

GAME (Ducking and other Greys and Blues).—First, L. Casson, Ulverston. Second, M. Billing, jun., Erdington, Birmingham. Third, J. Hodgson, Bradford.

GAME (Any other variety).—First, H. Thompson, Milnthorpe (Pile). Second, J. Brough, Carlisle. Third, E. Fearon, Hensingham (Black). Commended, J. Brough (Black). *Pullets*.—First, W. Cooper, Hensingham (Black Red). Second, J. Ferry, Netherby, Carlisle (Brown Red). Third, Capt. C. Fisher. Highly Commended, D. Tait, Grassmere (Black Red). Commended, J. Mitchell, Egremont; F. L. Roy, jun., Kelso.

SPANISH (Black).—First, W. Bayliss, Walsall. Second, J. Biggar, Ecclefechan. Third, R. J. Wood, Manchester. Highly Commended, H. Beldon, Gilstead. Commended, E. Brown, Sheffield. *Chickens*.—First, W. Newsome, Bingley. Second, E. Brown. Third, J. Biggar. Highly Commended, Mrs. W. C. Biggar, Maltstone; J. Wilson, St. Bees. Commended, H. Beldon; J. Wilson.

DORRINGS (Silver Grey).—First, R. Cousins, Whitehaven. Second and Third, R. D. Holt, Windermere. *Chickens*.—First, D. Steele, Windermere. Second, R. D. Holt. Third, T. Atkinson, Coniston. Highly Commended, F. R. Pease, Southend, Darlington.

DORRINGS (Any other variety).—First, H. Beldon, Gilstead (Dark Grey). Second, T. Rogers, St. Helens (Dark Grey). Third, C. W. Brierley, Middleton, Manchester (White). Highly Commended, J. Robinson, Garstang (Coloured); W. Cooper, Hensingham (White).

COCHIN-CHINA (Any variety).—First, J. Nood, Chorley, near Preston (Buff). Second, Miss E. A. Agilony, Grassmere (Partridge). Third, J. Biggar, Ecclefechan (White). Highly Commended, J. Biggar (White); T. Stretch, Ormskirk (White); R. J. Wood, Lower Campeall (White); E. Smith, Middleton, Manchester (Buff). Commended, J. Cattell, Birmingham (Buff); F. M. Hindle, Haslingden (Buff).

BRAMA POOTRA (Any variety).—First, H. Lacy, Hedden Bridge. Second, F. R. Pease, Southend, Darlington. Third, J. Poole, Ulverston. Highly Commended, H. Beldon, Gilstead.

HAMBURGERS (Golden-spangled).—First, H. Beldon, Gilstead. Second, D. Holt, Grassmere. Third, J. Robinson, Garstang. *Chickens*.—First, R. Tate, Sandwith. Second, J. Brough, Carlisle. Third, W. G. R. Jones, Whitehaven.

Highly Commended, J. Robinson; H. Beldon. Commended, W. Newsome, Whitehaven.

HAMBURGERS (Silver-spangled).—First, J. Robinson, Garstang. Second, H. Beldon, Gilstead. Third, J. Smalley, Blackburn. *Chickens*.—First, J. Robinson. Second, H. Beldon. Third, J. Smalley. Highly Commended, E. Collinge, Middleton, Manchester.

HAMBURGERS (Any other variety).—First, J. Robinson. Second, W. Smith, Halifax. Third, H. Beldon. Highly Commended, C. Moore, Preston. *Chickens*.—First, H. Beldon (Pencilled). Second, J. Robinson, Garstang (Pencilled). Third, R. Tate, Leeds (Black-pencilled). Highly Commended, C. Moore (Silver-pencilled).

POLAND (Any variety).—First and Second, H. Beldon, Gilstead. Third, C. W. Brierley, Middleton, Manchester.

BANTAMS (Game).—First, C. W. Brierley, Middleton, Manchester. Second, J. Munn, Newchurch, Manchester. Third, Miss Agilony. Highly Commended, R. Pickering, Carlisle; T. Robinson, Ulverston; F. R. Pease, Southend, Darlington; J. Crossland, jun., Wakefield.

BANTAMS (Gold and Silver-laced).—First, F. L. Roy, jun., Kelso. Second, F. R. Pease, Southend, Darlington. Highly Commended, C. W. Brierley, Middleton, Manchester.

BANTAMS (Any other variety).—First, J. Crossland, jun., Wakefield (White). Second, F. R. Pease, Southend, Darlington. Highly Commended, H. Beldon, Gilstead (Black).

ANY NEW OR DISTINCT VARIETY NOT PREVIOUSLY MENTIONED.—First, R. Smith, Middleton, Manchester (Sultans). Second, W. F. Dixon, Mersey (Russian). Third, R. Loft, Woodmansey, Beverley (Sultans).

ANY DISTINCT CROSSES.—First and Second, S. Jefferson, Whitehaven (Cochin and Dorking). Third, J. H. Wilson, St. Bees (Black Spanish and Golden-spangled Hamburg). Highly Commended, E. Fearon, Hensingham (Brahma Pootra and Dorking). Commended, S. Jefferson (Brahma Pootra and Cochin-China).

DUCKS (Aylesbury).—First, J. Smith, Grantham. Second and Third, F. M. Hindle, Haslingden. Highly Commended, J. Robinson, Garstang. Commended, H. Beldon, Gilstead.

DUCKS (Rouen).—First, T. Robinson, Ulverston. Second, Miss Lowther, Distington. Third, W. G. R. Jones, Whitehaven. Highly Commended, A. Dickinson, West Croft; S. Sherwen, Whitehaven. Commended, W. Stamper, Brigham, Carlisle; M. Mawson, Frizington; J. Ross, Carlisle.

DUCKS (Any other variety).—First, H. Beldon, Gilstead. Second, J. R. Jessop, Hull (East Indian). Third, J. Gunson, Sandwith (Muscovies). Highly Commended, R. Pickering, Carlisle; W. Sisson, Whitehaven (White Muscovies); J. R. Jessop (Wild Ducks).

PIGEONS.

CARRIER.—First and Cup, W. Stalker, Liverpool. Highly Commended, W. B. Van Haansbergen, Newcastle-on-Tyne; H. Beldon, Gilstead; E. Brown, Sheffield. Commended, M. Irwin, Whitehaven.

CARRIERS.—First, H. Yardley, Birmingham. Second, E. Brown, Sheffield. Highly Commended, W. Stalker, Liverpool. Commended, J. R. Robinson, Sunderland.

TUMBLERS (Almond).—First, W. Stalker, Liverpool. Second, E. Brown, Sheffield. Highly Commended, W. Stalker; F. Key, Beverley.

TUMBLERS (Bald-headed).—First, J. W. Edge, Birmingham. Second, W. Stalker, Liverpool. Commended, G. Birkett, Whitehaven; S. Sherwen, Whitehaven.

TUMBLERS (Any other variety).—First, R. Pickering, Carlisle. Second, J. & W. Towerson, Egremont. Highly Commended, H. Beldon, Gilstead. Commended, R. Thompson, Kendal.

POWTERS.—First, J. & W. Towerson, Egremont.

FANTAILS.—First, W. B. Van Haansbergen, Newcastle-on-Tyne. Second, H. Beldon, Gilstead. Highly Commended, F. Key, Beverley; H. Yardley, Birmingham. Commended, J. W. Edge, Birmingham.

JACOBIENS.—First, E. E. M. Royds, Rochdale. Second, R. Pickering, Carlisle. Highly Commended, J. R. Robinson, Sunderland; H. Beldon, Gilstead; J. Thompson, Bingley.

TUMBLERS.—First, J. R. Robinson, Sunderland. Second, W. B. Van Haansbergen, Newcastle-on-Tyne. Highly Commended, J. R. Robinson; F. Key, Beverley.

BARRS.—First, W. B. Van Haansbergen. Second, H. Yardley. Highly Commended, H. Beldon. Commended, R. Thompson, Kendal.

TURBITS.—First, R. Thompson. Second, H. Yardley. Highly Commended, J. W. Edge, Birmingham.

OWLS.—First, R. Pickering, Carlisle. Second, J. W. Edge. Highly Commended, J. R. Robinson, Sunderland; E. E. M. Royds, Rochdale; H. Yardley; J. & W. Towerson, Egremont.

RUNTS.—First, S. Sherwin, Whitehaven. Second, M. Irwin, Whitehaven. Highly Commended, E. Fearon, Hensingham.

ANY OTHER VARIETY.—First, W. B. Van Haansbergen (Victorias). Second, J. W. Edge, Birmingham. Highly Commended, W. B. Van Haansbergen (Isabels); J. & W. Towerson (Magpies); Commended, H. Yardley.

CANARIES.

BELGIAN (Yellow).—First, H. Thompson, Maryport. Second, W. Lyon, Whitehaven. Highly Commended, J. Walker. Commended, S. Todd.

BELGIAN (Buff).—First, H. Stephenson, Whitehaven. Second, T. Doughall, Carlisle. Highly Commended, H. Stephenson. Commended, S. Todd, Whitehaven; G. Bryden, Whitehaven.

MULE (Yellow).—Prize, T. Doughall, Carlisle.

MULE (Buff).—First, W. Swinburn, Whitehaven. Second, J. Walker, Whitehaven. Highly Commended, J. W. Colville, Egremont; J. Walker.

PIKBALD (Yellow or Buff).—First, R. Bowness, Frizington. Second, J. Walker, Whitehaven. Highly Commended, J. Willens, Whitehaven; J. Rigg, Arlecdon; D. Bryan, Whitehaven. Commended, J. Willens; M. Middleton, Arlecdon; A. Birnie, Whitehaven.

LIZARD (Gold and Silver-spangled).—First and Second, J. Walker, Whitehaven.

RABBITS.

LOP-EARED.—Prize, W. H. G. Fearon, Hensingham.

LOP-EARED.—First, J. W. Colville, Egremont. Second, G. Jones, Birmingham. Third, E. E. M. Royds, Rochdale.

ANY OTHER VARIETY.—First, J. P. Hedley, Whitehaven (Angola). Second, W. Taylor. Third, T. Weeks, Cumberland (Angola).

JUDGES.—*Poultry*: Richard Teebay, Esq., Fullwood, near Preston. *Canaries*: Anthony Benson, Esq., Whitehaven.

ABERDEENSHIRE POULTRY SHOW.

THIS Exhibition was held at the Artillery Gymnasium, Queen Street, Aberdeen, on Wednesday, Thursday, and Friday, the 4th, 5th, and 6th inst.

SPANISH.—First and Cup, Rt. Hon. Viscountess Holmesdale, Linton Park, Kent. Second, Messrs. Brown & Cochrane, Perth. Third, Mrs. M. U. B. Cross, Monifeth, near Dundee. **CHICKENS.**—First, Viscountess Holmesdale. Second, W. Meff, Aberdeen. Third, G. Wallace, Aberdeen. Very Highly Commended, W. Hay, Aberdeen.

DORKINGS.—First and Cup, Rt. Hon. Viscountess Holmesdale. Second, E. Tudman, Whitechurch, Salop. Third, Lord Kinnaird, Inchture. Very Highly Commended, Mrs. M. U. B. Cross, Monifeth, near Dundee; Messrs. Brown & Cochrane, Perth; J. Elsworth, Glasgow. Highly Commended, Rev. J. F. Newton, Kirby-in-Cleveland; F. R. Pease, Southend, Darlington. **CHICKENS.**—First, Viscountess Holmesdale. Second, W. Meff, Aberdeen. Third and Very Highly Commended, J. Anderson, Meigle. Highly Commended, J. Gordon; W. Meff. Commended, Mrs. Black, Banchoy.

COCHIN-CHINAS.—First and Cup, Messrs. Brown & Cochrane, Perth. Second, E. Tudman, Whitechurch, Salop. Third, C. T. Bishop, Lenton, Nottingham. Very Highly Commended, C. T. Bishop; Viscountess Holmesdale. Highly Commended, G. Murray, Aberdeen. Commended, G. Fell, Warrington; Mrs. A. Guy, Grantham. **CHICKENS.**—First, Viscountess Holmesdale. Second, G. Fell. Third, C. T. Bishop.

GAMES.—First, J. Anderson, Meigle. Second, J. M'Nab, Barrhead, near Glasgow. Third, J. Wood, Wigan. Highly Commended, J. Mollison, Meigle; Mrs. M. U. B. Cross. **CHICKENS.**—First and Second, J. Anderson. Third, J. Wood. Highly Commended, Mrs. Rennet, Aberdeen; W. Robertson, Glasgow.

HAMBURGERS (Golden or Silver-pencilled).—First, Viscountess Holmesdale. Second and Cup, G. Wallace, Aberdeen. Third, J. M'Innes, Paisley. Very Highly Commended, R. Hemingway, Shelf, near Halifax.

HAMBURGERS (Golden-spangled).—First, Viscountess Holmesdale. Second, H. Beldon, Bradford. Third, Mrs. Stronach, Aberdeen.

HAMBURGERS (Silver-spangled).—First, Viscountess Holmesdale. Second, H. Beldon. Third, J. M'Nab, Barrhead, near Glasgow. Highly Commended, J. Milne, Port-Elphinstone; Mrs. M. U. B. Cross, Monifeth. Commended, Capt. C. L. Hay, Kinnethmont.

POLANDS.—First and Second, H. Beldon. Third, F. R. Pease, Southend, Darlington.

BANTAMS.—First, J. Anderson, Meigle. Second, Mrs. M. U. B. Cross. Third, F. R. Pease. Highly Commended, J. Anderson; F. R. Pease; Mrs. M. U. B. Cross; W. Hodgson, Darlington; H. Beldon.

BRAHMA POOTRAS.—First and Cup, R. W. Boyle, Dundrum, Dublin. Second, Mrs. M. U. B. Cross. Third, Mrs. H. Barclay, Kinross. Very Highly Commended, Mrs. Carnegie, Fordoun. Highly Commended, Lord Kinnaird; Mrs. F. Leith, Alford; R. W. Boyle. Commended, F. R. Pease.

ANY OTHER PURE BREED.—Very Highly Commended, H. Beldon (Black Hamburgs).

GEES.—First, F. R. Pease. Second and Third, Lord Kinnaird. **DUCKS (Aylesbury).**—First, Mrs. Carnegie, Fordoun. Second, Lord Kinnaird. Third, H. Beldon. Highly Commended, W. Forbes, Pitcairne, Aberdeenshire.

DUCKS (Any other variety).—First and Third, J. Anderson, Meigle (Rouen and Black East Indian). Second, Mrs. Cochrane, Perth (Rouen). Highly Commended, Lord Kinnaird (Rouen); Mrs. F. Leith, Alford (Rouen); Mrs. Carnegie, Fordoun (Rouen). Commended, Lady Gladstone, Farquie, Kincardineshire (Rouen); A. Farquhar, Elsick, near Stonehaven (Rouen).

TURKEYS.—First, F. R. Pease. Second, Lady Gladstone. Third and Highly Commended, Lord Kinnaird.

SELLING CLASS.—First, W. Meff, Aberdeen (Spanish). Second, J. R. Robinson (Duckwing Game). Third, Mrs. Rennet, Aberdeen (Game). Highly Commended, A. F. Williamson, Caskieben (Dorkings).

SINGLE COCK.—*Spanish.*—First and Second, W. Meff, Aberdeen. Third, W. Hay, Aberdeen. *Dorking.*—First, G. Campbell, New Pittslico. Second, Mrs. Black, Banchoy. Third, G. Wallace, Aberdeen. *Cochin-China.*—First, Mrs. Tocher, Aberdeen. Second and Third, W. Hendry, Aberdeen. *Game.*—First and Cup, J. Fletcher, Stonecrough, Manchester. Second, R. Swift, Nottingham. Third, M. Billing, jun., Erdington, Birmingham. Very Highly Commended, Miss J. A. Aykroyd, Bradford; J. Anderson, Meigle; Mrs. M. U. B. Cross. Highly Commended, J. M'Nab, Barrhead, Glasgow. Commended, Mrs. M. U. B. Cross. *Hamburg.*—First, T. Knowles, jun., Aberdeen. Second, J. Ness, Kirkcaldy. Third, Mrs. Stronach, Aberdeen. *Brahma Pootra.*—First, A. B. Milne, Auchindachy. Second, Mrs. H. Barclay, Kinross. Third, J. Masson, Keith.

PIGEONS.

POWTERS.—First and Medal, M. Sanderson, Edinburgh. Second and Third, J. Hay, Aberdeen. Highly Commended, F. Macrae, Aberdeen. Commended, J. R. Robinson, Sunderland.

FANTAILS.—First and Medal, W. J. Van Haansbergen, Newcastle-on-Tyne. Second, J. Rae, Guestrow. Third, J. Hay, Aberdeen. Highly Commended, J. Baillie, Aberdeen. Commended, H. Beldon, Bradford.

CARRIERS.—First and Medal, T. Colley, Sheffield. Second, F. Macrae, Aberdeen. Third, J. R. Robinson, Sunderland. Highly Commended, T. Knowles, jun., Aberdeen. Commended, J. R. Michie, Stoneywood, near Aberdeen.

TUMBLERS.—First and Medal, J. R. Robinson. Second, J. Bell, Newcastle-upon-Tyne. Third, M. Sanderson, Edinburgh. Highly Commended, H. Beldon. Commended, J. Hay.

JACOBS.—First, J. R. Robinson. Second, H. Beldon. Third and Highly Commended, J. Baillie, Aberdeen. Commended, T. Knowles, jun.

ANY OTHER VARIETY.—First, J. R. Robinson (Trumpeters). Second, A. Murray, Aberdeen (Blue Turbits). Third, H. Beldon. Highly Commended, A. Murray (White Trumpeters). Commended, J. R. Robinson (Turbits).

CANARIES.

BELGIAN (Yellow).—*Cock.*—First, J. Mitchell, Aberdeen. Second, J. Milne, Aberdeen. Third, W. Wilson, Aberdeen. *Hen.*—First and Second, W. Donald, Aberdeen. Third, J. Leeds, Aberdeen. *Cock of 1864.*—First, A. Barnett, Aberdeen. Second, W. Donald. Third, J. T. Garden, Aberdeen. Highly Commended, Mrs. A. Smith, Aberdeen. *Hen of 1864.*—First, W. Donald. Second, J. Mitchell. Third, A. Donald, Aberdeen.

BELGIAN (Buff).—*Cock.*—First, W. Donald. Second, J. T. Garden. Third, J. Mitchell. Highly Commended and Commended, J. T. Garden. *Hen.*—First, R. Smith, Inverury. Second, W. Wilson. Third, A. Middleton. Highly Commended, R. Smith. *Cock of 1864.*—First, J. Hunter, Aberdeen. Second, J. Garden. Third, A. Catto, Woodside. Highly Commended, A. Donald. *Hen of 1864.*—First and Third, J. Hunter. Second, J. Fraser, Woodside. Highly Commended, J. Mitchell.

BELGIAN (Fleeced).—*Cock.*—First, A. Barnett. Second, D. M'Kay, Aberdeen. Third, W. Anderson, Aberdeen. Highly Commended, J. Falconer, Aberdeen. *Hen.*—First, J. Falconer. Second and Third, A. Middleton. *Cock of 1864.*—First, W. Anderson. Second, J. Falconer. Third, J. T. Garden. Highly Commended, W. Anderson. Commended, G. Gill, Banchoy. *Hen of 1864.*—First and Second, A. Middleton. Third, J. Milne.

SCOTCH FANCY.—First and Second, R. Ross, Aberdeen. Third, J. Nicol, Aberdeen. Highly Commended, R. Ross. Commended, A. Middleton. **GOLDFINCH MULE.**—First, D. Wright, Aberdeen. Second and Third, J. Hunter.

JUDGES.—*Poultry:* Mr. J. Douglas. *Pigeons:* Mr. Frame, Overton, Carlisle.

PAISLEY ORNITHOLOGICAL EXHIBITION.

THE eleventh annual Exhibition of Poultry, Pigeons, Canaries, and other small birds, held under the auspices of the Paisley Ornithological Association, took place January 2nd, in the large building in William Street, belonging to P. Coats, Esq., of Woodside and which, as for several years past, was kindly granted to the Association by that gentleman for the purpose. The entries were more numerous, it is believed, than has ever been the case before at any similar Exhibition in Scotland; and a better collection could not have been brought together, as it included the choicest prize fowls and birds from all parts of the country. Owing to the disagreeable condition of the weather, the turn out of ladies was not so great as we have seen on previous occasions, but otherwise the attendance was excellent, as all the departments were crowded from the opening to the close.

The following is a list of the awards:—

SPANISH.—First and Medal, J. Crawford, Belth. Second, J. Hutchieson, Paisley. Third, J. Urquhart, Ballat. **CHICKENS.**—First and Medal, A. Mitchell, Paisley. Second, J. Urquhart. Third, J. Shearer, Paisley.

DORKINGS (Coloured).—First, Medal, and Cup, J. Elsworth, Campsie Junction. Second, J. Burns, Craigends. Third, T. Barrowman, Cummock. **CHICKENS.**—First, H. Heye, Springfield House. Second, J. Elsworth. Third, J. Linning, Glasgow.

DORKINGS (White).—First, A. Russell, Paisley. Second, J. Aitken, Paisley. Third, A. Jardine, Cardonall.

CHINESE.—First, G. Aitken, Kirkintilloch. Second, A. Campbell, Blythswood. Third, G. Tawse, Helensburgh.

BRAHMA POOTRA.—First, J. Paton, Rigg, Stewarton. Second, A. Campbell, Blythswood. Third, R. Abercrombie, Paisley.

OLD SCOTCH BREED.—First, Second, and Medal, W. Thomson, Glasgow. Third, J. Allison, Rutherglen.

HAMBURGH (Golden-spangled).—First, Second, Third, and Medal, R. Cunningham, Stewarton.

HAMBURGH (Golden-pencilled).—First, Second, and Medal, J. M'Innes, Paisley. Third, J. Paton, Rigg, Stewarton.

HAMBURGH (Silver-spangled).—First, J. Watson, Lanark. Second, J. Stewart, North Arthurie. Third, J. M'Innes, Paisley.

HAMBURGH (Silver-pencilled).—First, D. Illingworth, Burley, Otley, Yorkshire. Second, R. Cunningham, Third, J. M'Innes.

POLANDS (Black and White Crested).—First and Second, G. Paul, Glasgow. Third, J. M'Innes.

TORPED POLANDS (Any colour).—First and Second, W. Ramsay, Johnstone.

GAME (Black-breasted and others).—First and Medal, J. H. M'Nab, South Arthurie. Second, J. M'Dowall, Johnstone. Third, W. Robertson.

GAME (Any other colour).—First, Second, and Third, A. M'Culloch, Trees.

BANTAMS (Game, any colour).—First, J. Taylor, jun. Second, P. Catterson, Grahamstone, Barrhead. Medal, J. Turner, Barrhead. Commended, A. Campbell, Blythswood.

BANTAMS (Golden or Silver).—First, J. Linning, Glasgow. Second, J. Reid, Paisley.

BANTAMS (Any other kind).—First, D. Murray, Eglinton Castle. Second, J. C. Nelson, Airdrie. Third, W. Morris, Paisley. Highly Commended, W. Morris.

ANY OTHER VARIETY.—First, J. C. Nelson, Airdrie. Second, A. Campbell. Third, R. Loft, Beverley, Yorkshire.

DUCKS (Aylesbury).—First and Third, H. Heye, Barrhead. Second, A. Sym, Townholm, Kilmarnock.

DUCKS (Any other kind).—First, A. Campbell, Blythswood. Second, G. Aitken, Kirkintilloch. Third, A. M'Culloch, Trees.

PIGEONS.

POWTERS.—First, W. Lightbody, Glasgow. Second, W. Neilson, Johnstone. Third, J. Mitchell, Glasgow.

CARRIERS.—First, G. Wallace, Burnbank, Glasgow. Second, R. Fulton, Shandon Cottage, London. Third, J. Muir, Glasgow.

FANTAILS.—First, W. B. van Haansbergen, Newcastle-on-Tyne. Second, J. Muir, Glasgow. Third, G. Wallace, Burnbank, Glasgow.

RUFFS.—First, R. Loft, Beverley, Yorkshire. Second and Third, E. Barclay, Paisley.

TUMBLERS (Short-faced).—First and Second, M. Stewart, Glasgow. Third, G. Wallace, Burnbank, Glasgow.

TUMBLERS (Any other kind).—First, T. Short, Glasgow. Second, J. Sharp, Johnstone. Third, R. Blair, Johnstone.

ANY OTHER DISTINCT BREED.—First, J. Cook, Williamsburgh. Second, J. Sharp, Johnstone. Third, W. Neilson.
COMMON PIGEONS.—First, J. Sharp, Johnstone. Second, W. Neilson, Johnstone. Third, J. Soular, Kilmarnock.

SMALL BIRDS.

PAIRS FOR SILVER MEDAL.—First (Silver Medal), J. M'Lauchlan, Paisley. Second, T. Allison, Paisley. Third, J. Crawford.
YELLOW.—Cock.—First, T. Buchanan, Glasgow. Second, W. M'Kechnie, Paisley. Third, A. Mitchell, Paisley. Fourth, J. M'Catter, Glasgow.
HEN.—First, G. Masterton, Glasgow. Second, J. Muir, Kilmarnock. Third, R. S. Wylie, Paisley. Fourth, J. Wilson, Galston.
BUFF.—Cock.—First, B. Fleming, Paisley. Second, W. Weir, Paisley. Third, B. Hill, Hamilton. Fourth, J. Glen, Paisley. Hen.—First, W. Houston, Paisley. Second, G. Masterton, Glasgow. Third, J. Templeman, Glasgow. Fourth, M. Bell Glasgow.

PIEBALDS FOR CAGE.—Prize, J. Hamilton.
PIEBALD (Yellow).—Cock.—First, H. Fisher, Glasgow. Second, J. Young, Dalry. Third, J. M'Vey, Paisley. Fourth, G. Masterton, Glasgow. Hen.—First, J. Wilson, Galston. Second, R. White, Paisley. Third, W. Robertson, Paisley. Fourth, J. O'Brien, Greenock.

PIEBALD (Buff).—Cock.—First, H. Fisher, Glasgow. Second, J. Laugland, Kilmarnock. Third, A. Robertson, Glasgow. Fourth, J. Kirkland, Beith. Hen.—First, R. Wood, Paisley. Second, J. Fulton, Beith. Third, R. S. Wylie, Paisley. Fourth, G. Hamilton, Beith.

GOLDFINCH MULE COCK (Yellow).—First, J. Shearer, Paisley. Second, A. Glen, Erskine.

GOLDFINCH MULE COCK (Buff).—First, A. Hogg, Oakley. Second, J. Muir, Kilmarnock.

GOLDFINCH.—First, J. Haddow, Kilwinning. Second, H. Hill, Hamilton.

BULLFINCH.—First, J. Burns, Craigends. Second, J. Johnstone, Glasgow.

—(Glasgow Daily Herald).

FIFE AND KINROSS ORNITHOLOGICAL SOCIETY.

THE annual Show of this Society was held in the Corn Exchange, Kirkcaldy, on the 2nd and 3rd inst., when the following prizes were awarded:—

DORKINGS.—First, J. Taylor, Deven Vale House. Second, Countess de Flahault, Tullyallan. Third, J. Stocks, West Bridge. Chickens.—First J. Spalding, East Fall. Second and Third, J. Stocks. Highly Commended Countess de Flahault.

COCHIN-CHINA.—First, T. Y. Craig. Second, C. A. Lockhart, Kirkcaldy. Third, Lord Loughborough, Dysart. Chickens.—First T. Y. Craig. Second, Mrs. Oswald, Dunnikier. Third, C. A. Lockhart. Highly Commended, Mrs. Oswald.

SPANISH.—First, R. Somerville, Edinburgh. Second and Third, R. Dixon, Kirkcaldy. Chickens.—First, R. Somerville. Second, W. Hay, Aberdeen. Third, J. Hunter, Kirkcaldy.

HAMBURG (Spangled).—First, J. Neas, Pathhead. Second and Third, W. Keddie, Cowdenbeath.

HAMBURG (Pencilled).—First, D. Penman, Boreland. Second and Third, J. Neas, Pathhead. Highly Commended, J. Ballingall. Commended, H. Brown, Coatdown of Balgonie.

GAME (Black and Brown Reds).—First, A. Spalding, Kirkcaldy. Second, R. Stark, Kirkcaldy. Third, A. Moyes, Kinghorn. Chickens.—First and Third, J. L. Anderson. Second, T. Anderson, Kirkcaldy.

GAME (Grey and others).—First, J. Gilmour, Milton, Balgonie. Second and Third, J. C. Aitken, Leslie.

BANTAMS (Any variety).—First, R. Spalding (Game). Second, Countess de Flahault (Japanese). Third, W. Hay, Aberdeen. Commended, A. Hutton (Gold-laced).

ANY OTHER BREED.—First, Second, and Third, Countess de Flahault (Polands, Buff Polands, and Poulde la Flèche).

DUCKS (Aylesbury).—First, Mrs. Anderson, Chapel House. Second, J. Mungall.

DUCKS (Any other breed).—First, Countess de Flahault (East Indian). Second, J. Kidd (Blue).

GAME COCK (Any variety).—First, D. Penman, Boreland. Second, A. Spalding. Third, J. Anderson, Kirkcaldy.

DORKING COCKS.—First, J. Spalding, East Fall. Second, J. Menzies. Third, J. Stocks. Highly Commended, D. Normand, Kennoway. Commended, Countess de Flahault.

SPANISH COCKS.—First, R. Somerville, Edinburgh. Second, W. Hay, Aberdeen. Third, R. Aitken, Edinburgh.

COCHIN COCKS (Any variety).—First, Mrs. Oswald. Second, Lord Loughborough. Third, J. Y. Craig.

PIGEONS.—Tumblers.—First and Second, E. Spence, Musselburgh. Fantails.—First, J. Grant, Carstairs. Second, Miss Purvis, Jedburgh. Pouters.—First, J. Grant, Edinburgh (White). Second, J. S. Christie, Kirkcaldy. Any other variety.—First, W. Veitch, jun., Jedburgh (Trumpeters). Second, Miss Purvis (Red Jacobins). Commended, — Soutair (Nuns).

CANARIES.

SCOTCH FANCY (Yellow Cocks).—First, W. Bonthron, jun., Kirkcaldy. Second, A. Welsh, Edinburgh. Third, J. Tweedie, Kelty.

SCOTCH FANCY (Buff Cocks).—First, J. Smith, Dundee. Second, J. Mitchell, Perth. Third, W. Poyet, Edinburgh.

SCOTCH FANCY (Yellow Hens).—First, R. Veitch, Leith. Second, J. Edwards, Dundee. Third, G. Greig, Edinburgh.

SCOTCH FANCY (Buff Hens).—First, R. Hunter, Oakley. Second, R. Smith, Dundee. Third, J. Stephenson, Dundee.

BELOIAN (Yellow Cocks).—First, J. Hay, Dundee. Second, R. Forsyth, Edinburgh. Third, W. Pitcaithly, Dunfermline. Hens.—First, R. Forsyth, second, W. Bonthron, jun., Kirkcaldy. Third, J. Hay, Dundee.

BELOIAN (Buff Cocks).—First, S. Crawshaw, Dundee. Second, J. Clark, Kirkcaldy. Third, J. Hay, Dundee. Hens.—First, R. Forsyth, Edinburgh. Second, J. Hay, Dundee. Third, A. Hope.

ANY OTHER DISTINCT BREED.—First, J. Smith, Dundee. Second, J. Chapman.

Woodside. Third, W. Kidd, Edinburgh. Hens.—First, J. Stephenson, Dundee. Second, J. Ford, Frenchie. Third, J. Kerr, Perth.

PIEBALD (Buff Cocks).—First and Third, J. Smith, Dundee. Second, W. Broadfoot, Portobello. Hens.—First, D. Allen, Leith. Second, G. Greig, Edinburgh. Third, W. Bonthron, jun.

PIEBALD GOLDFINCH MULES (Yellow).—First and Second, D. Laing, Kirkcaldy. Third, W. Kirk.

PIEBALD GOLDFINCH MULES (Buff).—First, W. Kirk, Dunfermline. Second, Sergeant Swanson, Wemyss. Third, J. Wishart, Kirkcaldy.

JUDGES.—Poultry: Mr. W. C. Hardie, Carron. Pigeons: Mr. D. Stewart, Perth. Canaries: Mr. M. Bell, Glasgow; Mr. G. Binnie, Perth.

DUMFRIES AND MAXWELLTOWN ORNITHOLOGICAL SOCIETY.

THIS Society held its sixth Exhibition and competition of Canaries, Poultry, Pigeons, and Parrots in the Mechanics' Hall, Dumfries, on Monday and Tuesday. The Exhibition was a very attractive one, the best, we believe, that has yet been held in connection with the Society or in the district. The Canary department showed careful and successful breeding. On former occasions there have been larger entries, but never so many fine birds. The prize Canaries in all the departments were beautiful creatures, but even the eye of a connoisseur must have had great difficulty in determining the awards. The Goldfinches and Mules exhibited were also particularly fine.

The poultry was a very large and fine show—especially in the Game fowls and Dorkings—and the Hamburgs, Cochinchinas, and Brahma Pootras exhibited, although not so many, were very beautiful specimens. The Bantams were well contested, and many fine birds brought forward. The Pigeon department was one of the most attractive of the Exhibition, the show being very large and excellent.

The following is the prize list:—

CANARIES.

SCOTCH FANCY (Yellow).—Cocks.—First, Second, Third, and Medal, J. Thorpe, Dumfries. Hens.—First, J. Graham, Kilmarnock. Second and Third, J. Harding, Maxwelltown.

SCOTCH FANCY (Buff).—Cocks.—First, J. Graham. Second, J. Thorpe. Third, J. M'Allister, Dumfries. Hens.—First, J. Harding. Second, J. Graham. Third, T. Conchie, Drumpark.

PIEBALD (Yellow).—Cocks.—First and Medal, J. Thorpe. Second, J. Harding. Third, R. M'Cubbin, Annan. Hens.—First, J. Thorpe. Second, J. Graham. Third, R. Edgar, Maxwelltown.

PIEBALD (Buff).—Cocks.—First, J. Thorpe. Second, R. Edgar. Third, J. M'Allister. Hens.—First, J. Harding. Second, J. Scott, Dumfries.

BELOIAN (Buff).—Cocks.—Prize, J. Beeby, Carlisle. Hens.—Prize, J. Harding.

BELOIAN (Yellow).—Hens.—Prize, J. Beeby.

GOLDFINCH MULES (Yellow).—First, R. Davidson, Carlisle. Third, T. Dughall, Carlisle. Prize Card, J. Thorpe.

GOLDFINCH MULES (Buff).—First, R. Davidson. Second, T. Fergusson, Maxwelltown. Third, T. Dughall.

GOLDFINCHES.—First, R. Davidson. Second, G. Brown, Dunsever Vill age

Third, R. Kerr, Barjarg.

POULTRY.

GAME (Black Reds and other Reds and Blues).—First, W. D. Dickson, Thornhill. Second, J. Henderson, Dumfries. Commended, J. Fergusson, Wallacestown. Chickens.—Medal, J. Proudfoot, Lochthorn. Second, R. Kerr, Barjarg. Commended, R. Coltart, Dumfries.

GAME (Duckwing and other Greys).—First, M. Wells, Collin. Second, T. Wright, Lockerbie. Chickens.—First, M. Wells. Second and Commended, W. Henderson, Dumfries.

DORKINGS.—Medal, G. M'Holm, Hillhead. Second, W. Maxwell. Commended, W. F. H. Arundel, Barjarg. Chickens.—First, J. Maxwell, Dal-swinton. Second, R. Jardine, Moffat. Commended, T. W. Campbell.

HAMBURG (Golden-spangled).—First, Mrs. Blacklock, Lockerbie. Second, W. Currie, Maxwelltown. Commended, J. Glover, Dumfries.

CHICKENS.—Medal, J. Little, Moffat. Second, D. Hill, Ruthwell. Commended, D. Dickson, Moffat.

HAMBURG (Golden-pencilled).—First, T. W. Campbell. Second, Mrs. Blacklock. Chickens.—First and Second, M. M'Mahon, Lochanhead. Commended, R. Brownrigg, Keir.

HAMBURG (Silver-spangled).—First, W. Johnstone, Speddock Mill. Second, J. M'Court, Dumfries. Commended, M. Dewar, Maxwelltown.

CHICKENS.—First, S. Boyes, Blairshinnock. Second, R. M'Gregor, Belridding. Commended, Mrs. Waugh, Lochmaben.

HAMBURG (Silver-pencilled).—First, D. M'Knight, Brownhill. Second, W. Currie. Commended, R. Young, Lochbarbriggs. Chickens.—Medal and Second, R. Young. Commended, T. Wright.

BRAHMA POOTRAS.—Prize Card, Mrs. Gordon. Chickens.—First and Second, Mrs. Gordon. Commended, Mrs. Waugh.

SCOTCH GAYS.—Prize Card, D. Dickson. Chickens.—Prize Card, T. Maxwell, Dumfries.

SPANISH (Black).—Chickens.—Medal, Mrs. Smith, Broomhills. Second, T. Maxwell. Commended, — Little, Lockerbie.

ANY OTHER DISTINCT BREED.—Chickens.—Prize, T. Tait, Mosshead (White Crested).

COCHIN-CHINA.—Chickens.—First and Second, Mrs. Williamson, Cample Bridge. Commended, J. R. Martin, Durrisdeer.

BANTAMS (Gold and Silver-laced).—First, J. Anderson, Moffat. Second, M. Anderson, Moffat. Commended, T. Wright.

BANTAMS (Black).—First, Mrs. Cowpland, Dumfries. Second, J. M'Allister. **BANTAMS (White).—**Prize Card, J. Maxwell.
GAME BANTAMS (Black Reds and other Reds).—Medal, R. Coltart. Second, D. Irving, Dumfries. Commended, T. Davidson, Longtown.
GAME—Duckwing and other Greys).—First, T. Fergusson. Second, T. Wright. Commended, T. Fergusson.
ANY OTHER VARIETY.—Prize, Miss Bell, Dumfries (Common).
PIGEONS.—Tumblers.—First, J. Thorpe, Dumfries. Second, J. Thomson, Maxwelltown. Commended, R. Lamb, Dumfries. **Carriers.—**First and Second, J. Thorpe. **Pouters.—**Prize, J. Russell, Cargen. **Jacobins.—**First, W. Grierson, Maxwelltown. Second, S. Carswell, Dalbeattie. Commended, R. Kerr, Barjarg. **Fan-tails.—**First, Miss E. Simpson, Dumfries. Second, Miss M. Simpson, Dumfries. Commended, W. Currie, Maxwelltown.
PARROTS.—Prize, A. Brown, Dumfries.
FINEST FOREIGN BIRD (Any variety).—Prize Card, Miss Wright, Irongray (Guinea Fowl).
RAREST BRITISH BIRD (Any variety).—Prize, W. Cowan, Clarencefield (Large Blue Titmouse).
JUDGES.—Canaries: Mr. T. Haddow, Glasgow; Mr. G. Crawford, Beith. Poultry: Mr. Ritchie, Glasgow; Mr. Robinson, Carlisle.—(Dumfries and Glasgow Herald.)

CORK AND SOUTH OF IRELAND POULTRY SHOW.

THIS was held in the Athenæum, Cork, on the 4th and 5th inst. The following were the awards:—

SPANISH.—First, R. P. Williams, Dublin. Second, R. W. Boyle, Dublin. Highly Commended, J. W. Dyas, Blackrock. Commended, Hon. Mrs. C. M. Smyth, Ballinacray, Youghal; Mrs. Dring, Rockgrove; J. C. Perry, Brownings-town, Cork; F. Hodder, Templelawn, Cork. **Chickens.—**First, R. W. Boyle. Second, F. Hodder. Highly Commended, R. W. Boyle. Commended, R. P. Williams, Dublin; Mrs. T. Daly, Cork; Mrs. Dring; J. C. Perry; J. W. Dyas.
DORKINGS (Coloured).—First, F. Hodder, Templelawn. Second, T. O'Grady, Roughgrove, Bandon. Highly Commended, Mrs. Webb, Knocktoran; R. W. Boyle, Dublin. Commended, J. C. Perry, Brownings-town, Cork.
DORKINGS (Silver-grey).—First, F. Hodder, Templelawn. Second, A. E. Usher, Camphire, Cappoquin. Commended, R. P. Williams, Dublin. **Chickens.—**First, T. O'Grady, Roughgrove. Second, J. W. Dyas, Blackrock. Highly Commended, T. O'Grady. Commended, R. P. Williams; T. O'Grady.
DORKINGS (White).—First, F. R. Pease, Darlington. Second, J. C. Perry, Brownings-town, Cork.
DORKINGS (Coloured or White).—Chickens.—First, R. P. Williams, Dublin (Coloured). Second, Mrs. Dring, Rockgrove. Highly Commended, T. O'Grady, Roughgrove, Bandon (Coloured). Commended, Mrs. Webb, Knocktoran (Coloured); J. C. Perry (White); T. O'Grady (Coloured); K. Briscoe, Fermoy.
COCKINS (Buff).—First and Second, F. W. Zurhorst, Donnybrook. Highly Commended, F. W. Zurhorst. Commended, F. Hodder, Cork; J. C. Perry; F. W. Zurhorst.
COCKINS (Partridge and Grouse).—First, J. C. Perry, Brownings-town. Second, Mrs. Dring, Rockgrove.
COCKINS (White).—First, F. W. Zurhorst, Donnybrook. Dublin. Second, N. D. Parker, M.D., Cork. Highly Commended, F. W. Zurhorst. Commended, Miss Pike, Beesborough, Cork; F. W. Zurhorst.
BRAMMA POULTRY.—First, R. W. Boyle, Dundrum, Dublin. Second, J. C. Perry. Highly Commended, R. W. Boyle. Commended, J. C. Perry; R. W. Boyle.
CRANE CUCKERS.—First, J. C. Perry, Brownings-town, Cork. Second, Countess of Bandon, Castle Bernard.
GAME (Black or Brown Reds).—First, A. E. Usher, Camphire, Cappoquin. Second, J. C. Perry. Highly Commended, Rev. J. Stopford, Blackrock. Commended, G. Lantry, Malahide.
DUCKWINGS, PILES, &c.—First, E. Murphy, Cork. Second, J. C. Perry, Brownings-town.
EGGS.—Chickens.—First, G. Lantry, Malahide, Dublin. Second, C. H. Peacocke, Dublin. Commended, G. J. Wycherley, Cork; C. H. Peacocke.
DUCKWINGS, &c.—Chickens.—First, J. C. Perry. Second, Rev. J. Stopford, Blackrock.
POLLISH (White-crested).—Prize, J. C. Perry, Brownings-town, Cork.
POLLISH (Silver).—First, R. P. Williams, Dublin. Second, Miss Pike, Beesborough. Highly Commended, R. P. Williams, Dublin.
HAMSTERS (Golden).—First, J. C. Perry (Fencilled). Second, Mrs. Dring, Rockgrove.
HAMSTERS (Silver).—First, R. P. Williams, Dublin (Spangled). Second, T. O'Grady, Roughgrove, Bandon. Highly Commended, J. A. Fitzpatrick, Cork (Spangled).
BANTAMS (Sebright).—First, J. A. Fitzpatrick. Second, F. R. Pease, Darlington. Highly Commended, J. A. Fitzpatrick.
BANTAMS (Game).—First, J. A. Fitzpatrick, Cork (Duckwing). Second, F. Hodder, Templelawn. Highly Commended, F. W. Zurhorst, Donnybrook; Dublin; R. J. Harvey, Cork (Brown Reds); A. E. Usher, Camphire, Cappoquin.
JAPANESE SILKIES.—First and Second, F. Hodder, Templelawn.
ANY VARIETY.—First, Hon. Mrs. C. M. Smyth, Ballinacray (Rumpys). Second, F. R. Pease (Black Hamburgs). Highly Commended, J. C. Perry (Coralah and Guinea Fowl).
TURKEYS.—First, R. W. Boyle. Second, A. C. Sayers, Cork (Cambridge). Highly Commended, A. E. Usher (Cambridge). Commended, R. Briscoe, Fermoy (Cambridge and American). **Poultz.—**First, R. W. Boyle, Dundrum (Cambridge). Second, R. Briscoe (Cambridge). Highly Commended, Hon. Mrs. C. M. Smyth (Paragus).
GENE.—First and Second, R. W. Boyle, Dundrum (Various). Highly Commended, F. Ducrow, Windsor, Douglas (Chinese); Countess of Bandon, Castle Bernard (Chinese). Commended, Miss A. Deeble, Strandville, Rochestown. **Geolings.—**First, R. W. Boyle. Second, G. Langtry, Malahide, Dublin (Toulouse). Highly Commended, Miss A. E. Pike, Cork (Danubian). Commended, Mrs. T. Daly, Cork (Toulouse).

DUCKS (Aylesbury).—First, R. P. Williams, Dublin. Second, J. C. Perry, Brownings-town, Cork. Highly Commended, Countess of Bandon, Castle Bernard. Commended, J. W. Dyas, Blackrock. **Ducklings.—**First, R. P. Williams, Dublin. Second, Hon. Mrs. H. B. Bernard, Bandon.
DUCKS (Rouen).—First, R. P. Williams, Dublin. Second, N. D. Parker, M.D., Carrigrohane, Cork. **Ducklings.—**First and Second, R. W. Boyle, Dundrum, Dublin.
ANY VARIETY.—First, Miss A. E. Pike, Beesborough, Cork (Muscovy). Second, R. P. Williams (Call Ducks). Highly Commended and Commended, P. Ducrow, Windsor (Muscovy).
MRS. LYONS'S MEDAL.—Medal, T. O'Grady. Very Highly Commended, F. Hodder, Templelawn. Highly Commended, W. Joyce, Waterford.

PIGEONS.

POWTERS (Yellow-pied).—First, Dr. Harvey, Cork. Second, A. E. Usher, Camphire.
POWTERS (Black-pied).—First, J. H. Perrott, Hayfield, Cork. Second, Dr. Harvey, Cork.
POWTERS (Blue or Silver-pied).—First, J. H. Perrott, Hayfield, Cork. Second, Dr. Harvey. Commended, Dr. Harvey.
POWTERS (Red-pied, Mealy, or other Colour).—First, Dr. Harvey, Cork (Red). Second, J. H. Perrott (Mealy). Commended, Dr. Harvey (Grizzled and White); J. H. Perrott, Hayfield, Cork (Red and Checker); R. Fulton, Deptford, London.
POWTERS (White).—First, Dr. Harvey, Cork. Second, R. Fulton, Deptford. Commended, J. H. Perrott, Hayfield.
CARRIERS (Black).—First and Second, G. A. Wherland, Cork. Highly Commended, P. Goulding, Cork; G. A. Wherland. Commended, J. H. Perrott; O. A. Wherland.
CARRIERS (Dun).—First, R. Lane, Blackrock Road. Second, G. A. Wherland, Cork. Highly Commended, P. Goulding, Cork; R. Lane. Commended, G. A. Wherland.
CARRIERS (Blue or others).—First and Second, G. A. Wherland, Cork.
TUMBLERS (Short-faced, Almonds).—First, R. Fulton, Deptford. Second, Dr. Harvey.
TUMBLERS (Short-faced, Kites).—First, Dr. Harvey, Cork. Second, G. A. Wherland, Cork.
TUMBLERS (Short-faced, Mottles, or others).—First and Second, T. Hare.
TUMBLERS (Short-faced, Balts or Beards).—First, Dr. Harvey (Blue and Balts). Second, J. W. Edge, Birmingham (Balts).
TUMBLERS (Common, Balts or Beards).—First, J. Pike, Beesborough (Balts). Second, R. Russell (Red).
TUMBLERS (Common, Any other colour).—First, J. O'Leary. Second, J. Pike, Cork.
BARRS (Black or Dun).—First and Second, G. A. Wherland (Black). Highly Commended, J. H. Perrott.
BARRS (Any other colour).—First and Commended, G. A. Wherland (Red). Second, J. H. Perrott (Red).
JACOBINS (Red or Yellow).—First, J. W. Edge, Birmingham. Second, Miss A. E. Pike, Beesborough (Yellow).
JACOBINS (Any other colour).—First, R. Russell, Cork (White). Second, J. Perry.
FAN-TAILS (White).—First, J. Pike, Beesborough. Second, A. E. Usher, Camphire, Cappoquin.
FAN-TAILS (Any other colour).—First, J. Pike, Cork (Blue). Second, J. W. Edge, Birmingham.
OWLS (Blue or Silver).—First and Commended, A. E. Usher (Silver). Second, J. H. Perrott.
OWLS (Any other colour).—Prize, J. W. Edge, Birmingham.
TRUMPETERS (Mottles).—First, J. H. Perrott. Second, A. E. Usher.
TRUMPETERS (Any other colour).—First and Commended, J. H. Hutchin-son, Dublin (Yellow). Second, J. Dowling, Blackrock (White).
TURBETS.—First, J. W. Edge. Second, T. O'Grady, Bandon.
NEWA.—First, T. O'Grady. Second, J. W. Edge.
MAPIES.—Prize, P. Goulding, Cork.
ANY OTHER VARIETY.—First, J. W. Edge. Second, Dr. Harvey (Pigny Powters and Isabells).
SWEETSTAKES.—Pouter (Any colour).—Prize, R. Fulton, Deptford. **Carrier (Black).—**Prize, P. Goulding. **Tumbler (Short-faced).—**Prize, T. Wilde, Drogheda (Almond).
SILVER MEDAL (Best pair of Irish-bred Carriers).—Medal, P. Goulding.
SILVER MEDAL (Best Pouter cock).—Medal, Dr. Harvey (Red).

SONG BIRDS.

CANARIES (Yellow).—First, Mrs. Hodder, Templelawn. Second, J. Kilden, Cork. Commended, M. J. Collins, Cork.
CANARIES (Green).—First, E. Keating (Belgian). Second, J. Looney.
CANARIES (Mealy or Pied).—First, A. Veitch, Cork (Yellow-pied). Second, Mrs. Hodder (Pied). Commended, W. P. Harris, Blackrock.
GOLDFINCH MULES.—Prize, J. Corcoran.
LINNET MULES.—First, E. Keating, Cork. Second, W. A. Hill.
BLACKBIRDS.—First, W. A. Hill, Cork. Commended, J. Lloyd, Cork.
THRUSHERS.—First, W. P. Harris. Second, T. M'Sweeney (Speaking) Extra Prize, J. B. Birchley (White).
WOODLARKS.—Prize, R. Lane.
SKYLARKS.—First, R. J. Perry. Second, J. Lemple, Cork. Commended, R. Daly.
GOLDFINCHES.—First, J. Corcoran. Second, Mrs. Hodder, Templelawn.
LINNETS.—Prize, J. Desmond, Cork.
NOT CLASSED.—Very Highly Commended, W. E. Hill, Cork (Foreign Birds). Highly Commended, E. Keating (Cage of Birds) W. E. Hill (Rosellas and Cockateals). Commended, W. E. Hill (Indian Cockatoo).

The Judges were Mr. Tegetmeier for Poultry, Mr. Wolstenholme for Pigeons.

NORTH BRITISH COLUMBIAN SOCIETY.

THE awards made at this Show, held at Glasgow on the 23rd and 24th ult., appeared in our Number of the 27th, and we now supply a few remarks.

The great feature was the collection of Powters, no less

than 189 birds of this variety competing in the various classes, and they were considered, in point of excellence, to be greatly in advance of any previous Meeting, scarcely an inferior bird appearing. With the exception of three classes for birds bred in 1864, which were shown in pairs, the Powters were shown singly.

In the first class for the best pair of Pied Powters, Yellows excepted, bred in 1864, a silver medal was presented by Mr. John Geddes, jun. The medal was awarded to Mr. Stuart for a very fine pair of Blues, the cock being especially good, though rather too heavily-feathered in limb; the second and third prizes both going to capital Blacks. The class contained many good birds, but most of the pairs were unevenly-matched in some respect. For Yellow-pied Powters, bred in 1864, Mr. Montgomery of Belfast offered a medal, which Mr. George Ure won very easily with a fine pair; one of the pens noticed receiving commendation more from a desire to encourage an increase in birds of this colour than for their own merits. Mr. Miller's medal for the best pair of Whites, bred in 1864, only brought half a dozen pens, but some very promising birds competed, the three pens noticed being particularly good, and shown in fine condition. In the class for Black Powder cocks Mr. Ure had first with a remarkably lengthy, well-shaped, well-coloured bird. Mr. Montgomery's highly commended young cock will, we fancy, be heard of again to his owner's credit. White Powder cocks formed one of the finest classes in the Show, Mr. Maclean being first with a very graceful well-proportioned bird shown in fine condition, just over 19 inches in feather, and very nearly 7 inches in limb, to which was also awarded the special prize of a portrait in oil of the best Powder in the exhibition. Adjoining were three brothers of the above, one taking second, and the others each receiving high commendations. The class also contained other good representatives. Blue Powder cocks numbered 23, and were an unusually good class. The first-prize bird was particularly finely-shaped, but rather out of condition, measuring 19½ inches in feather, with a capital limb over 7 inches in length, the peculiarity of the wing-bar—a sort of mixture of Kite and Black—being objectionable. The second special prize for the best Powder in the Show was also awarded to this bird. Several very fine Blue cocks received notice. In Red Powder cocks Mr. Wallace had first with a fine lengthy bird rather faulty in colour, the second being a better Red, but shorter and rather gay. For the best Yellow Powder cock the entry was only small; the prize birds were, however, very fine. In Powder cocks, Any other colour, a good-shaped Mealy was first, and a Checker second, several pens receiving high commendation. A particularly good cock was shown in this class; the bird was a bad coloured Red, capital in points, and should have been in the class for Reds. An extraordinarily fine splashed cock, said to be 20 inches in length, with proportionate limb, had also to be passed over, having become crop-gorged, and it was suspended in a stocking in an adjacent room during the first day. In the class for Black Powder hens the first and second-prize birds were very even, both being excellent, the difference of a quarter of an inch in feather at length deciding the first position in favour of Mr. Stuart. White Powder hens only numbered seven, but were exceedingly fine, almost every bird being worthy of a first prize. Blue Powder hens were more numerous, but were not of equal merit; the prize birds, however, were good, and well worthy of their honours. In Red Powder hens Mr. Ure had both prizes with particularly good representatives. For Yellow Powder hens Mr. Ure completely outdistanced competition, the first-prize bird being one of the very best in the Show, and quite unapproachable in the colour. In the class for Powder hens, Any other colour, a good Mealy had first, and a Checker second.

It is not perhaps out of place to mention that the Sunder and birds arrived a day too late, and there is no doubt the prize-list would have been considerably altered had Mr. Potts's birds competed, the most noticeable being his extraordinary Red cock and hen, and a remarkably good Blue hen.

The silver medal for the best pair of young Carriers, presented by Mr. James Wallace, was awarded to first-class Duns belonging to Mr. Elise. The Carrier classes were well filled. Mr. Colley took the special prize for the best Carrier in the Show with a capital Dun hen.

Almond and Short-faced Tumblers were fair classes.

The silver medal for the best pair of young Barbs only brought four pens, Mr. Frame being successful with Blacks, both being promising birds, but difficult to distinguish as to sex, and the colour an unusual Black. In the class for Barbs the first-prize Yellows were good, but not looking in such condition as on the last occasion in which they came under our notice. The second-prize Black cock was very good, but orange-eyed, and only indifferently accompanied.

In the class for Fantails a silver medal, presented by Mr. Stuart, brought a large entry. Mr. Elise took the medal with a plain-headed pair, and, although slightly sullied in feather, they were small, short-backed, fine, and with capital tails. The second prize went to a very small pair, good in carriage, but narrow and contracted in tail.

Jacobins and Turbits were average classes.

In Trumpeters Mottles were first, and Whites second. A first-class pair (Mottles) belonging to Mr. Robinson arrived too late for competition.

Good White Owls were first, and Blues (Foreign) second, in the class for the variety, the competition being very poor.

Any other breed did not contain anything requiring particular notice.

The Powters occupied nearly the whole of the large room of the hall, all being shown in large circular pens. The other birds were placed in an adjacent room badly lighted. The Judges were not permitted to commence their arduous duties until 1 o'clock, owing to the non-arrival of several of the birds, this delay being the only drawback on the whole management of the Show, which was otherwise most ably carried out by the Committee, and more particularly by Mr. Ruthven, the indefatigable, genial, and courteous Hon. Secretary of the Society. Many birds were sold at large prices.

The awards gave general satisfaction, and we believe we are justified in stating that at no previous exhibition of the Society have the decisions met with such universal approbation.

POULTRY-KEEPING FROM A COMMERCIAL POINT OF VIEW.

(Continued from page 17.)

NATURAL HATCHING.

THE hens of all kind of gallinaceous fowls sit for twenty-one days; Ducks of the usual kind—such as Aylesbury, Rouen, and others, twenty-eight days; Muscovy Ducks, from thirty to thirty-five days; Geese, thirty to thirty-five days; Guinea fowls, from twenty-eight to thirty days; Turkeys, twenty-eight days; Pea hens, from twenty-eight to thirty days.

With the view of obtaining more eggs in a given time from a fowl, many writers suggest preventing a hen from sitting by cooping her up in a dark place on a low diet. Nothing can be more cruel than to force Nature without giving that necessary rest which overwork requires. Already domesticated fowls lay many more eggs than wild ones between their hatchings, and by a judicious houseing and feeding they can be made to lay still more, but then it is absolutely necessary to allow the hen to recruit her strength by a rest of twenty-one days on her nest and a liberal and suitable diet, as laying, and more particularly that of large eggs, is attended with considerable pain, as is evidenced by the difference in the sound hens make before and after laying, and also by their uneasiness whilst on the nest. Besides, domesticated fowls are naturally of a sociable disposition, and to separate a hen from her companions and to keep her on a low diet when she requires rest and nourishing food to recruit her strength, after she has become exhausted from the pain of laying and the drain on her constitution by the rapid formation of her eggs, is the height of cruelty, and would surely not be practised were breeders aware of the injury they do to the health of their hens.

I do not say that hens should be permitted to rear their brood, as that would be waste of time and very hard work to a kind mother who will but ill-feed herself to provide as much as possible for her young (she has rest neither day nor night, as she is compelled to remain in an unnatural position to cover her young ones, and this can be performed with greater success by artificial mothers, as will be explained hereafter);

but what I do advise those persons who have a regard for the health of their fowls and their own interest, is to allow Nature her own way by giving a hen her twenty-one days' rest, and during that period a quiet place and nourishing poultaeous food, after which time she can be returned to her own home when, in a few days, she will recommence laying.

When a hen wants to sit she utters a peculiar cluck, ruffles her feathers, wanders about, searches for dark corners and recesses, and is evidently ill at ease. She is feverishly hot and resolutely takes to a nest in which there are eggs, whether of her own production or not matters little to her. At this time a hen will allow herself to be separated from her companions and placed in solitary confinement without fretting, provided she has a nest and eggs to sit upon. It is not advisable to allow a hen to hatch in her ordinary home and amidst her companions, who are fond of usurping her nest and laying fresh eggs in it.

The incubating compartment should be composed of two chambers. See *fig. 14*.

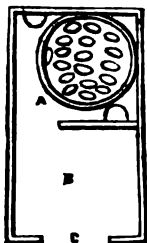


Fig. 14.—Plan of Hatching-room.

A Is the hatching room or nest, near which food and water are suspended to enable the hen to refresh herself without having to leave the nest, which she does reluctantly.

B Is the dressing-room in which she performs her ablutions in gritty dust.

C Is a glazed door over which a perforated zinc plate is fixed for the ventilation of the pen. Warm moisture being necessary to the hatching of strong and healthy chickens, as evidenced by wild birds and hens that sometimes unobserved will hatch a brood under a hedge in the fields,

I recommend the sitting-nest to be made of earthenware, as in *fig. 5*, the same as for laying, with this difference, that a fresh-cut piece of turf should be placed on the sand and on it the eggs should be put. The heat of the hen will

soon generate steam, but whenever the turf becomes too dry some water may be poured on the sand underneath.

The number of eggs to be placed under a hen must necessarily depend on her size. A Dorking, Cochin-China, Brahma Pootra, or other large breed, can with every certainty hatch at least fifteen eggs; and as regards the selection of the eggs all I can advise is to choose fresh and good-sized ones. Some persons pretend to be able to tell whether an egg is fecundated, and whether it will produce a male or female bird, but these assertions have not as yet been satisfactorily proved.

ARTIFICIAL HENS FOR REARING CHICKENS.

Where poultry breeding is carried on as a commercial undertaking, and where it is intended to rear the greatest number of chickens with the least number of hens, and this without interfering with their laying, artificial mothers are of the utmost importance.

The functions of a hen towards her chickens consist of forming a covering to prevent the natural heat of their unfledged bodies from cooling; also, to break into small pieces any food that is too large for them; and lastly, to protect them against danger. Now, my artificial mothers not only do all this, but they perform these duties a great deal better and with less casualties to the chickens.

Most writers on poultry do not believe in artificial hatching or rearing, yet they might as well doubt growing tropical fruits and plants in England. Chickens neither require artificial heat nor that of their mother; all that is necessary is to provide them with a suitable covering to their bodies until they are fully fledged to preserve the natural heat of their bodies, the same as with infants. During cold weather, however, their home must be warmed the same as for full-grown poultry; then a good ventilation without draught, a dry floor, sun, light, and a small run are likewise needed.

The portable artificial hen particularly recommended to breeders and amateurs, is shown by *fig. 15*, she performs her duties as a mother towards the chickens entrusted to her care with far greater success than a hen could possibly do.

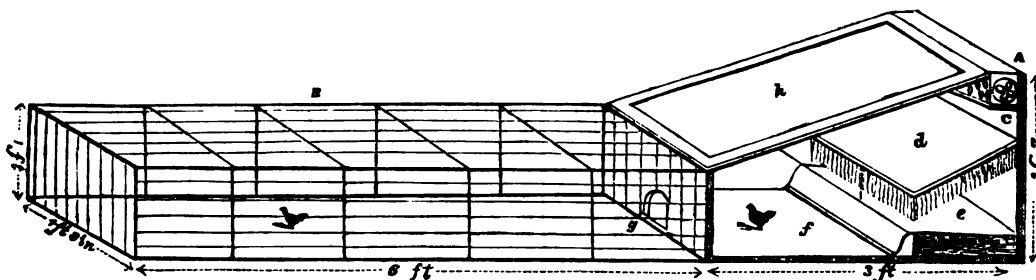


Fig. 15.—Portable Artificial Hen.

A Is a glass-covered frame 3 feet long, 15 inches wide, and 2 feet high at the apex, and 12 inches at the rise of the glass frame. This forms a dry run in wet and cold weather; c, is an air-flue across the frame for the necessary ventilation, and formed of perforated zinc. At each end of this flue a ventilator is fixed by which the admission of air can be regulated according to the temperature of the atmosphere. It will be seen that chickens are not exposed to draught by this arrangement of ventilation; d, is a frame lined with long fleece, under which the chickens will roost the same as under the wings of a hen, and will even prefer the artificial mother, as I have ascertained by experience; e, is about 1 inch deep of ashes which may be sprinkled with flowers of sulphur. This makes a dry and warm footing and retains the heat but the ashes should be renewed or sifted once a week; f, the floor, should be slightly covered with sand, to be renewed every other day; g, is a small door communicating with the open run; h, is a glass frame made to open by means of a slide or by hinges.

B Is the moveable open run 6 feet long, 15 inches wide, and 12 inches high. It is made of galvanised wire which not only keeps the chickens from danger, but also prevents them from roaming.

The artificial mother being portable should be taken indoors every afternoon during the winter months, and in the daytime be placed on grass or dry land. However, for large breeding establishments the arrangements would be different, and be explained in the artificial rearing home.

THE ARTIFICIAL REARING HOME.

In poultry-breeding establishments of any magnitude the portable artificial mother could not well be used with advantage, its cost and the labour that would be required for a proper attendance on the chickens, are obstacles which cannot be overlooked without loss to the breeder. In fact, as I have stated before, in any large establishment a judicious arrangement for saving labour and for performing the work systematically by subdivision of labour, becomes of the utmost importance in a commercial point of view. Although the principles of the portable mother are strictly retained in the arrangement of the rearing home, yet it will be seen that where many thousand chickens have to be attended to in separate compartments containing not more than twelve each, the building, as shown in *fig. 16*, must necessarily facilitate the work of cleaning, feeding, warming, and general supervision.

A Is a sunk passage lined by brick walls, the floor is formed of concrete with a provision for drainage. Along the whole length of the passage hot-waterpipes should be fixed immediately under the roosting place. A door communicates with the covered run **B**, and wire-netting **C**, is fixed over the door for ventilation. The roof of this passage can either be glazed or formed of boards covered with asphalt or felt, but, if glazed, it can be used as a forcing-house. However, provision must be made for efficient ventilation. This passage should be about 5 feet wide between the walls, and 6 feet 6 inches high.

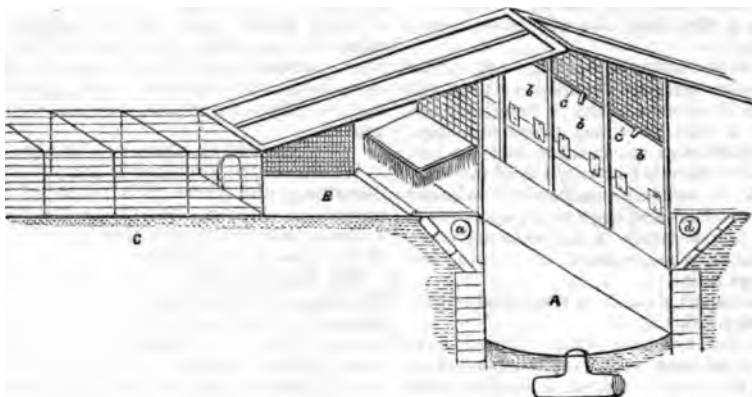


Fig. 16.—Artificial Rearing-home

B Is the glass-covered run. It differs from the portable hen only in this, that here the sides are formed of galvanised-iron wire-netting, and only the front is made of boards. The floor is made of concrete covered with gritty dust. This run can also with advantage be made a little larger—say, 4 feet long, 13 inches wide, and 2 feet 6 inches high.

C Is the open run. The floor can be made of concrete or gravel, with an incline towards a gutter for quick drainage. The sides and top can be made of galvanised-iron

wire-netting, on the same plan as shown in figs. 9, 10, 11.—
G. K. GREYELIN, Civil Engineer, London.

(To be continued.)

AN ACCIDENT CLEVERLY AND COMPLETELY REPAIRED.

EARLY on the morning of Nov. 30th the central portion of the county of Dumfries was visited by a severe gale, which blew in gusts and whirlblasts, doing considerable damage in places naturally sheltered and little if at all exposed to the direct action of the current. Knowing that my bee-houses were protected from the storm by the intervention of elevated buildings, I felt quite comfortable as to their safety, and slept tranquilly till daybreak, paying little attention to the wind, which one moment would, somewhat lulled, be wildly wailing through the trees, and the next expending itself in a roar, which threatened to sweep everything before it. So little anxiety did I feel about the welfare of my bees, that it was not till about ten or eleven o'clock, when the wind had fallen and the rain ceased, that the thought came into my head to go into the garden and see how they fared. Imagine, then, my mortification when, on nearing the apiary, I found that a shed containing a favourite Ligurian hive had been overturned by the wind, and, as I imagined, rocked to perdition, seeing its upper end had caught and rested in its fall on the stem of a Gooseberry bush.

What was to be done to remedy the evil? The thermometer did not reach 40°, and I knew that if I caused any bees to go abroad they would immediately be thrown into a state of asphyxia and perish; besides, the weather was by no means favourable to any out-door operations, for though the wind had fallen the skies were still lowering. By merely looking at the outside of the hive, which was a Woodbury frame box of the usual dimensions, I could not tell what internal damage had been sustained; and I was afraid to elevate it from the floor-board for the purpose of inspection, lest the combs, being detached, should fall down through the disarranged frames and thus occasion more death and destruction.

It was necessary, however, to do something, and accordingly I began by inverting and replacing gently and gradually, and with the least disturbance possible, the overturned box in its former horizontal position. I then carried it to a room raised by a small fire to a temperature of about 50°, and placed it on a chair close to the window, allowing any bees that chose to come out and fly against it.

My next act was to unscrew the crown-board, slightly raise it, and with a puff from my cigar send the bees helter-skelter down amongst the frames. But what a sight for a compassionate bee-master presented itself when the crown-board was removed and the interior of the hive exposed to view! The lower board was swimming with honey—hundreds

of the poor bees were drowned in it, and many of them also were crushed between the combs, which lay broken and piled against each other like the tilted strata of geologists. Every comb had parted from its frame, and altogether the pounded-looking mass was a piteous spectacle.

Furnishing myself with a goose feather and a spare Woodbury hive containing only one frame and comb, I commenced operations by putting into it a small piece of comb covered with bees, gently lifted from the ruins. I then removed the frames and pieces of comb in succession, brushing off the bees with a feather into the spare Woodbury-box. The combs and frames, when cleared of the adhering bees, were set aside, and in a short time the operation of transferring all the bees from their original domicile to the spare box was completed. The emptied stock-box with its floor-board was then washed and dried. My next step was to nail slips of wood one-eighth of an inch in thickness by half an inch in breadth along one side of each frame from top to bottom, placing the slips about 2 inches apart. I then laid the frames on a newspaper, the slips being under, and placed the broken combs upon the slips, making the junctions as neat as possible, and keeping the comb close to the top bar. These broken combs I secured by slips laid over them and nailed to the top and bottom bars nearly opposite the other slips. The combs thus encased, though broken into many pieces, could not get out of position, and might readily be handled by the frame. As soon as I managed to get the frames refitted with comb in this manner I returned them to the original box; then, taking the spare box containing the bees, I placed it over the frames, and swept the bees down between them, and afterwards replaced the crown-board.

During the operations many bees flew against the window and fell down benumbed; these I now carefully gathered into a wide-mouthed bottle, and revived by the application of gentle heat, pouring them, as soon as animation returned, amongst their fellows through the central hole in the crown-board. I did the same with those which had been bedaubed or drowned in the escaped honey; and I believe I do not go beyond the truth when I say that the whole remedial process did not entail the loss of a dozen lives, and it was accomplished without either hands or face being in any way protected. An occasional whiff from a pipe or cigar was all that was needed to subdue their resentment whenever any bees showed a disposition to revenge what they could not but regard as insulting.

The reason why the combs were so much broken in this

ill-fated hive can be explained by their newness and the weight of honey which they contained; besides, they only approached the verge of the bottom bars, and consequently were not fastened to them throughout. Had the combs been light and aged the breakage might have been trifling. Now, Dr. Cumming, in one of his letters to the *Times*, said, "The Woodbury hive is no improvement." Had he witnessed the mischief I have described and the complete restoration which followed, I feel confident he would have retracted his words, and admitted, however unwillingly, that in the Woodbury hive only, at so inclement a season, could the damage done have been repaired and the lives of the bees saved.

In less than a fortnight I had the satisfaction of seeing the whole of the broken combs mended and firmly fastened to their respective frames, and the hive again in almost as flourishing a condition as it was before it met with the accident. As the slips of wood were no longer necessary either to support or keep the combs in position, I brought my hive once more into the house, took out the frames, and removed the slips.

A hive which permits such operations possesses advantages of no common order, and for experimental purposes the Woodbury frame stands pre-eminent in the estimation of very competent judges. Accidents to hives in winter are much to be regretted, but they are sometimes unavoidable. At that season of the year they ought, if possible, never to be disturbed. When hibernating bees will remain quiescent and almost motionless for several months; but if put into an active state they are obliged, whether the weather will permit or not, to leave the hive and relieve their distended abdomens. When this is the case in a temperature of 40° or less, and there is a breeze at all, myriads depart never to return. I have a great objection to feeding or disturbing hives in any manner from the beginning or middle of October till the beginning or middle of March. This remark, however, only applies to the south of Scotland. In Devonshire, I fancy, the winter is comparatively short, and the cold of North Britain almost unknown.—R. S.

A NEW CHAPTER IN THE NATURAL HISTORY OF THE BEE.

BEE COMMOTIONS AND QUEEN ENCASEMENTS.
(Continued from page 20.)

SUCH were my opinions in 1859. I thought that superannuation, debility, and incapacity of the queen had much to do with the phenomena of commotions. Several cases occurring in my apiary shortly after, seemed to justify the impressions then entertained. In these the circumstances and condition of the hives were somewhat identical, and the queens were all aged and declining in strength. In all this I thought I could recognise a uniform principle at work, exhausted fertility and weakness in the queen. Moreover, it was my practice in general, on any commotion being exhibited in a hive, to examine it carefully, and in most instances I found that the queen's encasement was the origin of all the turmoil and excitement among the bees.

SUCH were my opinions as I have said in 1859. Further experience, however, and increased facilities of observation from the possession of all sorts of hives—observatory, Huber, unicomb, and frame-hives—opened up to me new aspects of this interesting subject. I found that old queens were not alone subjected to these strange encasements. Hives possessing queens two years, and one year old, were not exempted from being thrown into a state of confusion by their queens being encased. Nay, I found that queens only a few weeks old were sometimes the objects of similar treatment, and had to pass through the same ordeal of a rigorous captivity. The whole question now appeared to me more mysterious and unaccountable than ever. Failing to construct any feasible or consistent theory on this *quæstio vexata*, unable to reconcile conflicting difficulties and explain facts as they presented themselves, I now felt half inclined, I confess, to abandon the subject in despair as inexplicable. Nevertheless, I continued to note down and comment on all the subsequent cases which occurred in my apiary up to the present time. They were more than usually numerous in 1861, 1862, and 1863.

I reared a great number of artificial queens during these years, and hence, especially during the inauspicious season of 1862, several curious cases of youthful princesses being encased presented themselves. At the risk of trespassing, both upon the Editors' space and the reader's patience, it may be, I must be permitted to record two or three of them. They are exceedingly interesting to the naturalist, and I hope, also, to the practical apiarian. In connection with this subject I may mention, that during these seasons I had some very interesting cases of drone-breeding queens, both among the old as well as the young; and it was in the autumn of 1862 that I sent a couple of queens in an abnormal condition to Mr. Woodbury for microscopic examination of their reproductive organs. The result was communicated in No. 80, of this Journal, 7th October, 1862. I shall confine myself here, however, strictly to the subject on hand. I shall select, therefore, two of the most recent cases which occurred in 1863, inasmuch as other curious facts connected with impregnation of the queen are elicited, independently of the question before us.

Case 1.—On the 18th July, 1863, I dislodged the Ligurian bees and queen from an octagon frame observatory, and introduced in their room a swarm of black bees, minus the queen, in order that they might rear for me some Ligurian princesses. On the 31st, I proceeded to the apiary at 6 A.M., but found that even then I was not too early for my purpose. External evidence was not wanting in discovering to me that the young queen was at large, and had already commenced the work of destruction among her younger rivals. I lost no time in proceeding to work. I drew up the frames one by one until I found her royal highness busily engaged in the very act of demolishing a rival cell, being half imbedded in a cavity near its base nibbling away at it. The young pupa was still alive. I cut out two other royal cells which were untouched, and gave them to hive No. 6, first taking away its own black queen. On the 1st of August (that is the following morning), a young princess emerged from one of these, and the other was broken up and destroyed. On the 15th, I examined the combs but found no eggs had yet been laid. The drones in my apiary had now become very few, and as I had seen the queen repeatedly out afterwards, I knew she had not yet been impregnated. On the 28th, the usual external evidences of the queen's encasement manifested themselves. I immediately opened-up the frames and found it even so. I released her from "durance vile" in a state pitiful to behold. She was, however, again encased and kept prisoner for thirty-six hours. I again released her, and I now found that her wings were much torn and tattered, one was broken, and a leg was off. On examining the hive a few days afterwards, I was rejoiced to find her again at liberty and receiving some attention from the bees, but no eggs were yet laid. I examined the hive again on the 12th of September, but the queen had not yet deposited a single egg. I now half despaired of her ever doing so. On the 25th of September, I examined the hive once more and discovered the queen had at last become fertile. I found a small patch of comb containing eggs and grubs, and three or four cells sealed over; but as these were somewhat elongated, and their coverings more than ordinarily convex, I at once concluded that the queen had become a drone-breeder only. Reckoning the age of the sealed larvæ to be eight days, I found that the queen must have begun to deposit eggs on the 17th of September, when she would be exactly six weeks and five days old. On examining this hive shortly afterwards, I was agreeably disappointed to find, that with the exception of a dozen or so of drone brood, all the rest was that of workers. The population of this hive having now become thin, and the majority of the bees rather old for a good-keeping stock-hive, I joined a whole swarm of black bees to it on the 11th of October, and in the spring the queen became one of the most fertile in my apiary.

I have thus been tempted to digress a little from my subject in order to show (and it is not a solitary instance in my experience), that Huber's doctrine on this point—that a queen whose impregnation is delayed beyond the twenty-first day only lays drone eggs, is here thrown to the winds. True, it might be argued that there is here no real evidence that impregnation was delayed beyond the twenty-first day of her life, though she had postponed ovipositing till the

forty-seventh. Yet, reasoning analogically, that as a general rule the queen does lay within a few days after impregnation, we are warranted, I think, in applying the same rule to her conduct in this case, and concluding that impregnation had been so delayed.

Case 2.—On the 11th of August I removed the reigning queen from a unicomb-hive, and inserted therein a royal cell in course of being sealed. The young queen emerged in due time. There were, as I said in treating of the former case, few drones in my apiary at this time (the greater number of my hives having been sent to the heath). Five weeks elapsed, and no appearance of the queen having been fertilised. On the 25th of September I discovered the queen was encased, and in this state she was retained prisoner for two nights. I released her and put her in again at the top of the hive, but she was again surrounded, and I afterwards found her on the board in the midst of a dense cluster of bees apparently maltreating her. Not being desirous to experiment further with this queen, and she being a black one, I permanently removed her.

In addition to these cases I might also advert to one other. In the same summer I was in possession of a young queen also reared artificially—a most insignificant little creature she was, and she continued so long and so frequently to indulge in out-door excursions, that I formed a very bad opinion of her indeed, and so apparently did her own sisters, for they partially encased her at the very entrance of the hive on one occasion, as if determined to put a stop to her profitless wanderings. This queen remained long unfertile, though she ultimately became so; but the colony over which she reigned never prospered. At the close of the autumn I joined a whole swarm to this hive but all in vain. The prolific powers of the queen were evidently at fault, and the following spring she again manifested the same inactivity. Little progress was made in spring and summer. I then removed her and presented her to a queenless hive, but here she was maltreated and rejected. The bees would not have her to reign over them, and I found her the next morning extruded from the hive dead.

These queens, it will be observed, were all reared artificially; and I think it proper here to record an opinion long entertained by me, and borne out, I think, by ample proof in my experience, that such artificially-reared queens are generally less to be depended upon by the apiarian, and are, therefore, more hazardous to the hive than queens reared in the ordinary way. They are usually longer in getting fecundated, and more apt, accordingly, to go astray and be lost. They are also liable to encasement by the bees, and to become defective and abnormal in their character.

I am quite aware that these views do not find a place in the works of our most eminent apiarian authorities; but it is, I am inclined to believe, because their attention has not been experimentally drawn to the subject in all its details—indeed I am not very sanguine even that they will be indorsed by the more esteemed writers in this Journal; but, be this as it may, we must always yield up our opinions to the lessons of experience, and cannot run counter to the “irrefragable testimony of facts.”

At page 19, second column, beginning of fourth paragraph, for “had generally nothing to do with the queen,” read “had generally nothing to do with the loss of the queen.”—J. LOWE.

(To be continued.)

SUPPOSED BEE PARASITE.

You will find on the bees enclosed one of the Acari. I think they are common on bees after death. They are easily found on any parts of bees when the temperature of the air is not too low. I found many on parts of a few bees' stings after a few days, when I had been examining and comparing the Ligurian bees' sting with the sting of the black bees; but I have also found these Acari on living bees.—A LANARKSHIRE BEE-KEEPER.

The mites had vanished from the dead bees enclosed, but we have submitted the mounted specimen to Mr. Parfitt, the naturalist, who says:—“The little animal submitted to me for examination I believe to be *Acarus domesticus* (De Geer). From its being found in bee-hives I presume the

hives are damp, or that the floor-boards contain some decomposing matter, such as broken combs and excrementitious matter. I am not aware that this section of the genus *Acarus* feeds upon any living animal, but so far as is known confines itself to decaying substances. If your correspondent would favour you with a few specimens in a quill they would probably reach you alive. We might then be more certain as to the species, as the glass between which the specimen is mounted is so that thick only a very low power of the microscope will touch it—not sufficient for its proper elucidation.”]

BEES NOT SWARMING.—This season has been a remarkable one in regard to bees swarming in Central New York. In some cases not a swarm has issued. We have about forty hives of bees, and have not had a single swarm, such a circumstance never before occurring in our own apiary. The reason why the bees have not swarmed in our apiary is the fact that no drones have been reared in it this season. We never before, in twenty-five years' experience, knew of such a circumstance with our bees. Why no drones were reared we cannot tell; but without drones swarms are useless, as the young queens cannot be impregnated; as the bees, knowing this fact, destroy all the young queens, if any are produced, and in the absence of queens no swarms issue.—(*Rural American*.)

OUR LETTER BOX.

POULTRY SHOW ANNOUNCEMENTS (*Chateau Fallon*).—You are only one of many who similarly complain that exhibitions of poultry occur to which they would have sent birds had they known that such exhibitions were to take place. We insert in our list all that we are informed of, and if secretaries do not send to us, and if the committees will not advertise, we are not blameworthy. Three shillings and sixpence is the lowest charge, whether the advertisement consists of five lines, or only one, two, or three.

T. ANDREWS, DALE STREET, LIVERPOOL wrote some weeks since for some chickens, but prepayment being required, nothing further has been heard from him by A. C. F. Gurney.

DISEASED PIGEONS (*An Old Subscriber, Paisley*).—Your Pigeons seem to be suffering from a sort of influenza, and I fear the medicine (aloes and pepper) you have been giving will not do much to relieve your patient. I cured one of mine this spring by the following means, and if you like to try it I should be glad to hear the result:—Take one grain of tartar emetic and mix it thoroughly with twelve grains of calomel, divide this into twelve equal parts, and give one in a bread pill each day until the bird improves, after which give a bolus of cod-liver oil and flour every twelve hours for a few days.—B. P. BRENT.

COVENTRY SHOW (Pigeon).—We never heard of it. If secretaries will not inform us, and if committees will not advertise, we have not the gift of clairvoyance. We cannot insert anonymous articles.

WATER FOR FOWLS—PROMOTING LAYING (*Hamburg*).—The best thing to put in fowl's drink, in order to prevent contagion, or infection, is camphor. It is also a perfect cure for gapes. Sulphate of iron, and a few drops of sulphuric acid, are both good things to put in water. All forcing to lay is bad, and buying eggs at a large price. Meat, hempseed, and tallow-chandler's greaves, are the things most commonly given to induce laying.

BARK FOR POULTRY (*E. G. H.*).—We know what bark is, and can easily believe it has valuable properties for poultry. We should, however, rather class it among remedies than foods. After trying everything, we can find nothing so valuable as ground oats mixed with new milk for fattening every kind of poultry save Ducks and Geese.

CONFINED SPACE FOR POULTRY (*Subscriber*).—Put a heap of bricklayers rubbish in one corner of the space (50 by 44 feet), throw as much road sand over the place and under the trees as you can. Let the floor of your poultry-house be 4 or 5 inches above the level of the pen, and it should be gravel or dry earth. You will have no difficulty in keeping Cochins, or Brahma Pootras, or Spanish, and they (six hens and a cock) will do well.

GOLD FISH (*W. A. O.*).—The white parasitical fungus and blindness, one of its effects, are the bane of Gold Fish. The best preventive we know is having the bottom of the tank covered with clean drift sand, which is sharper than pit sand. A cure, when the parasite appears, is said to be effected by placing the fish for a few minutes in water having common salt dissolved in it at the rate of 4 ozs. to the gallon. We occasionally allow pieces of meat floated by being attached to small blocks of wood to be placed in the tank. The fish come and nibble the meat, and this is much better than allowing them to gorge finely shredded pieces.

LONDON MARKETS.—JANUARY 9. POULTRY.

Among the enormous masses of poultry that arrived in London between the 15th and 25th December a proper selection is necessary at market, that the different qualities may be produced when most wanted. It rarely happens that the market is so fully supplied that a demand is found for the lower classes of goods at full price, and that a salesman can accomplish that rare luxury of “a clear shop.” Falling this, a certain quantity must always remain for sale after Christmas-day has passed, and this year has been no exception. This renders it almost impossible to make any quotation for the week following Christmas. A few fresh and good things make large prices, but they are no guide for general sales.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JANUARY 17—23, 1865.	Average Temperature near London.			Rain in last 38 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
17	Tu	Ivy sheds its leaves.	42.5	30.6	36.6	13	0	af 8	21	af 4	46	10	49	9	20	10 29	17
18	W	Red Dead Nettle flowers.	42.6	31.3	36.9	15	59	7	23	4	49	11	10	10	21	10 48	18
19	Th	Creeping Crowfoot flowers.	42.9	30.4	36.6	17	58	7	24	4	morn.	38	10	22	11 7	19	
20	F	Groundsel flowers.	42.4	31.0	36.7	14	57	7	26	4	54	0	59	10	(	11 25	20
21	S	Sun's declination 18° 50'. S.	43.6	32.4	38.0	17	56	7	28	4	57	1	59	11	24	11 41	21
22	Sun	3 SUNDAY AFTER EPIPHANY.	44.4	32.7	38.4	16	55	7	30	4	1	2	after.	25	11 58	22	
23	M	Agardh born, 1785.	44.8	32.9	38.8	17	53	7	31	4	4	4	51	0	26	12 13	23

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 43.3°, and its night temperature 31.6°. The greatest heat was 60° on the 19th, 1828; and the lowest cold, 4½° below zero, on the 19th, 1838. The greatest fall of rain was 0.86 inch.

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ROYAL HORTICULTURAL SOCIETY.



HERE is still some hope for the Royal Horticultural Society. Notwithstanding the efforts that incompetence, mismanagement, and tinkering have made to render it a by-word in everybody's mouth, and notwithstanding the degraded position to which it has consequently fallen in the opinion of all horticulturists, both at home and abroad, there is hope for it still. There appears, by the steps that are about to be taken, to be an indication of a return to the legitimate objects of the Society, and, therefore, a prospect that, by proper management, and a thorough appreciation of the purpose it was instituted for, we may yet see it taking the position it

ought to occupy in the horticultural world, and which it never ought to have lost. If there ever was a society attempted to be destroyed, that was the Horticultural Society of London; and unless it had possessed an amount of vitality that even the gross mismanagement and incompetence to which it has lately been subjected could not destroy, it must long ago have gone the way of many another good institution, which, unfortunately for itself, could not bear up under such inflictions. By the "Proceedings" that have just been issued, we find that the three gentlemen whom the "horticultural party" voted out, but who tenaciously clung to their seats in defiance of the Charter, at the election of 1864, have seen it their duty to resign, so that there will be, at the next election, an opportunity of having Sir Joseph Paxton, Sir Arthur Buller, and Mr. George F. Wilson, in the place of Sir Wentworth Dilke, Bart., Mr. John Clutton, and Mr. John Lee. Of Sir Joseph Paxton we need say nothing; his horticultural feelings and tastes are well known. Sir Arthur Buller is, we believe, an ardent horticulturist, and well qualified for such a position; and we can speak confidently of Mr. George F. Wilson, F.R.S., whom we know to be not only an enthusiastic and successful horticulturist, but a gentleman of excellent business habits, and great scientific attainments. All of these gentlemen we regard as the type of what ought to constitute the Council of the Society.

But there are two other vacancies, caused by the resignation of Sir Daniel Cooper, Bart., who, on leaving for Australia, read and left behind him a protest against the culpable mismanagement of the Society, and the objectionable system of dictatorship which has crept into the administration of the Society's affairs; and by that of Mr. S. Holmes Godson (not Gordon, as the Assistant Secretary has printed it in the balloting papers), who

resigned, as he stated at the last meeting, because of the offensiveness of the Assistant Secretary, who refused to allow Mr. Godson, though a member of the Council, to inspect the accounts without the sanction of Mr. Cole. In the room of these gentlemen the names of Mr. B. T. Brandreth Gibbs, of Halfmoon Street, Piccadilly, and Mr. Andrew Murray, the late Assistant Secretary, are proposed. In Mr. Gibbs, whose administrative ability has long been apparent in the management of the Smithfield Club Cattle Shows, we should expect to find a valuable addition; and of Mr. Murray we have only to say, if his qualification to sit on the Council rests on the way in which he has filled the office of Assistant Secretary, it is poor indeed.

But who is the Hon. Edwin Portman, who has been appointed Assistant Secretary in the room of Mr. Murray? Where did he earn his horticultural honours? It is usual to throw such an appointment open, so that a choice for the best man may be afforded; but here there has been no such opportunity. There may be men in the horticultural world who are in every way qualified for such an appointment, but we are not aware that they have had a chance of offering their services to the Society. It may be, however, that the Hon. Edwin Portman is a very competent person; that he is an experienced gardener; that he can direct horticultural experiments; prepare show schedules; write botanical names correctly; lecture on vegetable physiology; tell the amount of heat that will be generated from a given quantity of four-inch pipe by a ton of Wallsend coals; and he may be able to recover the Society from its present difficulties; but that is not the point. The office ought to have been thrown open, and the best man chosen from among the candidates, of whom the Hon. Edwin Portman might have been one, and if he were the best, the Fellows of the Society would have known it.

Yet we feel justified in stating that the horticultural horizon begins to brighten. We believe this season will see an indication of a desire to do something for pure horticulture. Already a committee has been appointed for the direction of Chiswick Garden, from which we presume it is to be restored to its former attractiveness, and gardening experiments are to be carried on in such a way as to give evidence that practical horticulture is not any longer to be neglected. With such men as we hope to see elected at the next annual meeting, and with those of the former Council who remain, we feel sanguine for the future; but that feeling will only be indulged in so long as we know that the Society is governed by a horticultural Council, and not by a non-horticultural dictator.

FLOWERS OF THE PAST SEASON.

ROSES.

WERE I to be asked my opinion of those charming young *débutantes*, Lady Cicely Crinoline or Miss Clara Montgolfier, my answer would materially depend upon the time of the year when I saw them. If when their mammas (with as much care as John Scott would

exercise on the training of a young filly), had managed everything so that they should make their appearance under the most favourable circumstances, with all the freshness and hopefulness that a hitherto untried but tempting field encourages, I should probably pass a very different estimate of them to that which I should do when, after the fatigues, excitements, and follies of a London season, they were trotted out for inspection. With the bloom all off, the used-upedness most manifest, they would seem very different creatures to those who sparkled and shone with such brilliancy at their coming out. None the less different are those charming *débutantes* with such high-sounding names who cluster round the queen of flowers, and every year, we are told, are more beautiful, finer, and more superb than any of their predecessors. I have seen them in their native freshness, seen them as they grew in the raisers' ground around the fair city of Paris; and I have seen them afterwards when, forced in unnatural atmospheres, cut, hacked and hewn, budded, grafted, and what not, they have thrown out a bloom or two as indications of their beauty; and I have involuntarily exclaimed, "What! That used-up, pale-coloured, flimsy-petalled flower, the same ravishing beauty I saw before it came out! Why! there was that Bourbon Rose named after myself. I saw it at Margottin's—a fine, well-coloured, good-looking flower. I saw it several times this season, and I declare I felt like the little old woman in the nursery song whose petticoats had been cut short by some malicious wag, "It surely can't be I." I unhappily keep no dog, or I might have applied the same comical test she did. And hence one has to speak very doubtfully of the new Roses. Even after one season of trial we see but few of them in their normal condition, and very few of our finest Roses have won a name for themselves the first season. Hence in the remarks I make on those I have seen this past year I may, for all I know, be very far out, but at the same time it is the only chance one has of seeing them. I have already in a general way expressed my opinion upon them, and shall now go a little more into detail. Many I have not seen—indeed, there are many which I very much question whether they ever find their way over here in any shape; while we know of many that do that their owners would heartily wish back again in "their ain land."

Alpaide de Rotatier.—I have seen this but once, and then I thought it would be a useful flower. The colour is a clear rose with a satin-like gloss; the shape excellent.

André Leroy d'Angers.—A seedling of Trouillard's, Leroy's foreman, and in the possession of Mr. Standish. It is a very rich dark velvety purple. I may be too fastidious, but I should say another row of petals would be a great improvement. It will, I am sure, be a useful Rose.

Bernard Paliassy.—A very fine Rose, and, I am sure, likely to prove a favourite with exhibitors. It is a seedling from Jules Margottin, but not of the same shape as that flower, being flatter or expanded. The colour is a bright reddish carmine, and the growth all that can be desired.

Duchesse de Morny.—Undoubtedly one of the best Roses of the year; the colour a fresh pale rose, reverse of petals silvery. The shape is excellent, well cupped; the flowers large and double, but not too much so for our climate.

Claude Million.—I saw some good blooms of this at M. Eugène Verdier's in June last. It was there a well-cupped, imbricated, scarlet-crimson flower, and I have heard a good report of it from one or two growers here.

Kate Hausburg.—I saw a very nice bloom of this at Messrs. Paul & Son's at Cheshunt in the autumn. The flower promised to be large, colour clear rose. The plant appeared to be very vigorous.

Eugène Verdier.—A deep violet-purple rose, of excellent form, and likely to be an acquisition. This I also saw in bloom in Paris, but it is a Lyons flower.

Madame Derreulez Douvillé.—I see that this has not found its way into some catalogues, and yet I am convinced that it will be one of the best Roses of the year. I saw a bunch of its blooms at Levêque's (who let it out), and it was then very beautiful; the colour a bright pink or tender rose.

Madame Victor Verdier.—Undoubtedly one of the best of the year. I have seen some truly grand blooms of it. It is one of the very deepest Roses in build, not colour, that we have; and although the colour is of that bright cherry red

of which we have so many, yet I believe it will be a general favourite.

Maréchal Forey.—One of the few indifferent Roses that Margottin has sent out, and so I told him when I saw it in bloom in his garden. He was constrained to acknowledge that it was good for effect. Alas! effect is nothing to us over here unless there be shape, or colour, or both.

Pierre Notting.—Another Rose that will stand, I believe, Al with exhibitors and growers generally. I saw it at Cheshunt and at Mr. Hedge's; it was a fine, a very fine Rose, blackish red, full, deep in build, with large petals, well imbricated.

These are all that I have seen, and, therefore, all that I can speak about. I have heard others praised much, such as *Amiral La Peyrouse*, *Maréchal Souchet*, *Souvenir de Maréchal Serrurier*, *Paul de la Meilleray*, *La Reine de la Pape*, and *Baron Pelletan de Kinkelin*, but it is all hearsay; and I know how much individual tastes have to do with judgments in flowers, and therefore decline to "follow my leader" in this matter. All the Roses I have described have one quality without which I do not think any Rose ought now to stand a chance of being recognised as a desirable novelty—I mean vigour of growth. I am also inclined to agree with Mr. Perry that they are more deserving the name of Perpetuals than many of their predecessors; and what a pleasure it is to find, as I did to-day (January 11), on looking round my little plot, a really good Rose to be gathered and fit to place in a vase in the drawing-room. The last Rose of summer is a myth now, thanks to the Hybrid Perpetuals.

Before leaving this chat about new Roses, I may mention that I received the other day two plants of a Rose which will be I am sure, if true to its character elsewhere as it is in Devon, a great acquisition—I mean a *climbing Devonensis*. It is a sport which has been fixed by Mr. H. Curtis, of the Devon Rosery, Torquay, a name dear to every lover of the queen of flowers. The shoots on these plants were long and vigorous; and Mr. Curtis says it is equal in vigour to *Gloire de Dijon*. Should it be so generally, it will doubtless prove to be the best white climbing Rose we have.—D., Deal.

EFFECTS OF HORTICULTURAL EXHIBITIONS.

Now that horticultural exhibitions are over for the season of 1864, it may be considered neither edifying nor interesting to refer to the matter in a spirit of inquiry or discussion. This may be true as regards the season that is passed, but not so as respects that which is to come. The majority of plants, indeed, are at rest, and the stoves and greenhouses of exhibitors present an appearance that would, to the uninitiated, afford no indication of the splendid productions that grace the summer shows. Many people who admire the products of the greenhouse, the vinery, and the stove, but have no definite idea of the manner in which they are brought to perfection, would, probably, be much surprised could they see many of the places in which they are grown. The first impression would doubtless be that their care had been abandoned, or, at least, that no great efforts were being made for the following season. The majority of plants, I have said, are at rest, but the plantsman must know no rest beyond what is absolutely necessary at this or, indeed, any other period of the year. There must be careful and continued watchfulness. Silently and surely the work is progressing, and by-and-by the result will be seen. It is during the months of the winter and the opening days of spring that the exhibitor is earning the credit and applause which in the summer, if successful, he receives.

Now the reason many gentlemen object to their gardeners exhibiting is that all the energies of the latter are directed to the production of subjects for exhibition, and that at other periods of the year there are no flowers worth looking at, or fruit fit for the table. In a great many cases this I know to be true; but then there are some in which it is otherwise, and the above objection does not hold good. In such cases the energies and perseverance of the gardener are creditable, the more so, as they prove the fact that a man may be allowed to exhibit as an advantage to himself, and still keep in view the wishes and interests of his employer. On the other hand, I have known gardeners who appear to have no

desire to exhibit, simply because there is then nothing to take their attention off the place under their charge, and they are, consequently, able to keep everything in perfect order and neatness. I have lately seen a place where the gardener appears to entertain this view, and nothing could be prettier than the conservatory, nothing in more perfect order than the vinery, and, indeed, the whole garden generally, showing that the gardener possesses those qualities which are calculated to give satisfaction to his employer. There were no grand specimen plants in the conservatory, such as go towards making up an exhibition; the plants were mostly small, but clean and healthy, and tastefully arranged, showing they were in the hands of a clever plantaman, one who evidently could if he wished grow good specimens.

Now the question I would ask is, Were such men as he to exhibit would their employers be subject to any loss in consequence of the gardener's attention being too much directed to that particular object? There can be no doubt where a man shows superior taste and cleverness in growing plants to gratify his employer, that the same man would exercise the same qualities in growing them for public exhibition. In the case of the gardener his merit would become known and appreciated by a much wider circle, while his employer would probably be highly gratified. Nor do I believe that the interests of the latter would suffer in the least; for a gardener who is desirous of doing himself credit in a small way, where only his employer and friends can appreciate his endeavours, is not the one to slacken his exertions when he becomes better known. I have no hesitation in asserting that far from any loss resulting to the employer, the gain would be mutual. For the sake of illustration I will suppose that a gentleman, interested in gardening and plant-growing, engages the services of a man who is represented as being well acquainted with his business. This man shows a peculiar aptness for growing good specimen plants or fruits, and is desirous that the public should see and appreciate them. There may be some demur on the score of injury to the plants or fruit exhibited, but if carefully managed this need not be an obstacle, and the advantages outweigh all that can be said in opposition. The gardener obtains much credit, and derives some pecuniary benefit, while the master gains the reputation of being a patron of horticulture, and of encouraging a useful and scientific pursuit. There are, it is true, some men who are so careless as to bring home their plants in a woeful condition, and some, too, who regard a show-day as one on which they are bound to enjoy themselves to the utmost, and forthwith imbibe stimulants more freely than is necessary or advisable. Their plants, consequently, suffer injury to an extent that would justify gentlemen in refusing to allow their gardeners to exhibit; but such, I trust and believe, are exceptions; for men who can and do persevere in a business requiring such careful watching as plant-growing, are not and cannot be habitually given to stimulants. The mere fact of their success will generally be a sufficient guarantee for their sobriety.

Presuming that the question of allowing gardeners to exhibit is one of interest among employers, and knowing that *THE JOURNAL OF HORTICULTURE* has been a medium through which the subject has been agitated, I do not consider it out of place to renew the discussion. My own opinion is, that where employers are liberal, gardeners are careful, and exhibitions managed on correct principles, they are beneficial to employers, to gardeners, to the public generally, and to the interests of horticulture in particular.

In speaking of the liberality of employers I do not mean to imply that they should be always buying plants and spending large sums of money. It is a mistake to suppose that anything of the kind is necessary to exhibiting; for it often happens that one gardener, though ransacking every nursery in search of good things, as gardeners say, yet produces no good specimens, while another, who is content to do the best with what he has, does himself infinitely more credit by doing what he does well. What I would imply is that liberality of spirit which, allowing a man to understand his business fully, leaves him to manage it in his own way, untrammelled by doubts and fears, or requirements that operate as a clog, and make his situation one of extreme difficulty. That such is often the case I could call numerous witnesses; and although it may arise simply from want

of thought, still where a gardener is left entirely free, an otherwise difficult situation becomes comparatively easy.—F. CHITTY.

HARDINESS OF JAPANESE CONIFERS.

WITH reference to Mr. Robson's article respecting *Retinospora obtusa* turning yellow, I have to state that in the spring of 1863 my employer purchased a plant of each of the *Retinosporas*, also a plant of *Sciadopitys verticillata*, not knowing at that time if they were perfectly hardy. The following winter I placed them in a cold frame, where they could be protected from severe frost. Last autumn I planted them out in a bed composed of peat, sand, and loam. The *Sciadopitys* commenced turning yellow after the first frost, and had to be taken up again; but the *Retinosporas* are quite green, especially *obtusa*, although they have been exposed for several nights past to 12° and 14° of frost, which speaks well as to their hardiness.—E. WELCH, *Palace Gardens, Armagh, Ireland.*

CULTIVATION OF THE MELON.

(Continued from page 29.)

TEMPERATURE.—The next point of Melon culture relates to temperature, both top and bottom. The former should be equally maintained at one point day and night; the latter should be hotter by day than by night, so as to imitate as much as possible a natural atmosphere, subject to conditions essential to the cultivation of the plant in an artificial climate. The cultivator should bear in mind, that though a certain temperature is required to grow any fruit successfully, forcing should be influenced or governed by the external climate in which the artificial one is maintained. I allude to early forcing, when dull cloudy weather chiefly prevails, and when to maintain a high day temperature equal to that on bright days would be absurd, because it would be wasting the energies of the plant and causing slender imperfect growths. During severe weather it is equally wrong to act independently of external influences; for though Melons are natives of hot countries, yet in such extremely high and extremely low temperatures occur, the hottest days being followed by the coldest nights—that is, the most sunny days are the hottest, and the nights colder in proportion than when the days are cloudy. Small as these matters appear, they exert a great influence on vegetation, and no one can cultivate plants successfully without a knowledge of the laws that regulate the growth of vegetables. These are so clearly explained in the "Science and Practice of Gardening," that there can be no excuse for those who do not know why certain operations in the art of horticulture are needful.

At planting, and for a short time afterwards, it is desirable to maintain a rather high temperature both top and bottom, in order that the plants may be quickly established. To determine the degree of bottom heat a ground thermometer is a more certain and accurate means than feeling a trial stick. Such thermometers can now be had cheaply, and should be thrust in so that the bulb may be fully 6 inches below the surface. The readings should be from 80° to 85° for the first fortnight, afterwards they should be as nearly 80° as possible; and if the temperature be kept steady at that, and not lower nor higher than 85°, it could not be better suited for the Melon in any after-stage. The top heat for the first fortnight should range between 70° and 75° by night, with a rise of 5° on sunless days, 10° on those which are alternately cloudy and clear, and of 15° on clear days. After the plants have become well established the night temperature may sink to 65°, which should be the minimum; for though a night temperature of 60° will not have any evil effect on the well-being of the plant, yet that point should be attained but seldom, and then only when the house is first entered in the morning, which will be at 6 A.M., or soon afterwards. The fire should then be set going gently, so that by eight or half-past eight o'clock the thermometer may indicate 70° in a dull morning, 75° on a bright morning, or even 80° if the morning be mild and sunny. The fire may then be kept gently burning, so as not to allow the temperature, whatever it be, to sink, but, on the contrary,

to keep up that attained, and afford another rise of 5° by 1 P.M. The fire may then be made up, so that it will not increase the temperature, but allow of its sinking, which it will not do for some hours, in consequence of the heat radiated from the medium furnishing it; but towards night the temperature will begin to fall, as it ought, the fire only being used to prevent its sinking too low during the night. A little practice will soon enable any one to understand and manage this. These conditions of temperature are to be maintained at all stages of the growth of the plants, except when the fruit is ripening, when a higher temperature may be given with more air, as heat with light and air hastens ripening and heightens the flavour.

It sometimes becomes necessary to give more heat than above recommended in order to obtain fruit earlier, or by a fixed time. In this case the temperatures named may be increased 5° throughout; but this should not take place until the fruit is set and swelling, for to force earlier will result in weak growths, indifferent setting, and, of course, inferior fruit. If a plant is forced into an early maturity it cannot produce fruit equal to that obtained by a more natural system.

AIR.—I need scarcely say that air should be given on all favourable occasions, and a little will always be beneficial, even if a rather stronger fire be kept up to permit of its being given. There is no better rule than to admit air as soon as the thermometer indicates 80°—not too much all at once, for that may cause a reduction in the temperature, which never ought to take place—increasing it proportionately with the increase of temperature, or reducing it as the temperature declines. It should be given so that the temperature may increase, at all events be maintained, and not reduced by it, for that would be stimulating the plants one hour and causing a stagnation the next. Whatever amount of air is given, it should be reduced before the temperature is much decreased, it being advisable to shut up with a temperature at least 5° higher than when the lights were opened, or at 85°. This is trapping the sunbeams, or admitting them by opening early, and closing early in the afternoon in order to shut in as much of the sun heat as practicable. So long as the proper degree of heat is maintained it is impossible to give Melons too much fresh air; but in admitting it care should be taken to avoid cold draughts.

MOISTURE is most important in Melon culture. If the plants have too much they become gross, the fruit is watery and insipid, and, if the atmosphere be surcharged with it when the fruit is ripening, the latter is not only poor-flavoured but frequently cracks; if, on the other hand, there is a deficiency of moisture, the foliage is soon rendered a suitable prey for thrips and red spider, the fruit is small, and the duration of the plant short. Either extreme should therefore be guarded against. From the time of planting to that of the flowers opening the soil should be kept moist; it should not be sodden with water nor the plants allowed to flag for want of it. It should therefore be kept moist, or neither wet nor dry, yet it should not be kept so by dribbles, but by copious waterings at intervals of once or twice a-week, as the aspect of the soil itself indicates. The soil should likewise be moist when the fruit is setting, only water must then be given, so as not to wet the surface until the fruit is set. After this the soil should be kept moist, quite as much so as for Cucumbers, in order that the fruit may swell freely. This watering will usually be required about twice a-week—from the time when the fruit first fairly commences swelling to that of its netting, though the frequency of watering depends on the growth of the plants and the quantity of soil they grow in. When the borders are but narrow and shallow it may be necessary to water more frequently, and, instead of using clear water, weak liquid manure may be applied; but unless given by a practised hand it is best let alone, otherwise too strong a dose may cause irretrievable loss. Those not experienced in such matters would do well to make their liquid manure by dissolving one ounce of Peruvian guano in a gallon of soft water, and apply it at every alternate watering. A much better plan than employing any liquid manure is to mulch the surface of the borders, after the fruit is fairly set and swelling, with an inch or so of cowdung six months old, with the seed manure coming from an old Mashroom-bed

or in the absence of either of these with stable-manure. With this on the borders, whenever water is given enough of the nutritive constituents are washed down to the roots, and the supply is not excessive because only a small portion of the fertilising agents is washed into the soil at each watering. When the fruit begins to net the watering should be gradually reduced in about ten days to one half, after which it will suffice if the soil be kept only just moist until the fruit is ripe. All waterings, whether with water or liquid manure, should be of the same temperature as that in which the roots are situated.

Atmospheric moisture is another important agent in Melon culture. It is maintained by sprinkling the walls, paths, &c., and by having receptacles for water or gutters on the heating surface. When there is a tank, some part of which is open or communicating with the atmosphere through openings that can be regulated at will, the guttered pipes are not required; but when these conveniences do not exist, a row of guttered pipes along the front of Melon-houses, or, in fact, all houses that are required to be kept at a high temperature is beneficial, by maintaining a uniform degree of moisture. When there are such contrivances the necessity of frequent syringing is to a great extent obviated, and on dull days the moisture evaporated from them is quite sufficient without syringing; also, when the fruit is setting, during the early and late periods of the year, and when the fruit has advanced towards ripening. The evaporating-pans or gutters may be allowed to become empty when the fruit is ripening. In addition to the moisture obtained by evaporation from the troughs, gutters, or tanks, a gentle syringing of the plants, especially on the underside of the leaves at the time of shutting up the house or a short time afterwards, will do much towards checking the attacks of red spider and thrips, and is necessary to keep the plants healthy. On fine mornings every available surface may be sprinkled with water, and thus with the aid of the other evaporating surfaces sufficient moisture will be afforded the Melon in all its stages. No syringing overhead takes place at the time of setting, nor when the fruit is far advanced towards ripening.

When there are no evaporating-gutters or troughs, the syringe plays an important part in Melon culture in houses. During bright weather the plants should be syringed at shutting up, or not later than an hour afterwards, directing the force of water as much against the under side of the leaves as possible, and taking care to wet the stem for about a foot from the soil as little as possible. On bright mornings syringing should be repeated in the same way before 9 A.M.; but on dull days sprinkling the paths, walls, &c., will be sufficient, and in the afternoons of dull days when no air or but little is given, a sprinkling of the paths and walls will raise sufficient moisture without syringing the foliage. This syringing must be kept up at all times, subject to the conditions already mentioned, except when the blossoms are setting, at which period sprinkling twice a-day without syringing the foliage is desirable, and when the fruit begins to ripen, or after it becomes fully netted over, syringing must be discontinued, and sprinkling also when the fruit commences ripening.—G. ASBEY.

(To be continued.)

NEW FRUITS OF AMERICAN ORIGIN.

THE following extract from the proceedings of the American Institute Farmers' Club of December 6th last is of interest, as relating to a variety of Pear which has already received the stamp of approval from nurserymen in this country as quite worthy of a place in a select catalogue of English fruits:—

"A New Winter Pear.—Wm. S. Carpenter placed upon the table specimens of a new winter Pear, sufficient to give every one present a practical test of its quality. It is in colour yellow russet, in size and shape not unlike the Seckle. It is in good eating condition from this time until February, according to the method that it is preserved. It is deliciously sweet and melting to the taste, and it was pronounced by a unanimous vote of the Club the best winter Pear known. A bushel of this variety is now on exhibition at the rooms of the Institute for the Greeley Prize of

100 dollars, and we shall be surprised if it does not gain the award of the committee. Mr. Carpenter stated that the Pear was known as Dana's Hovey, and called upon Mr. C. M. Hovey, who was present, to state how it originated.

"Mr. Hovey stated that the opinion had prevailed for a very long period that seedlings produced by planting the best known varieties of Pears always tended back towards the wild stock: hence the neglect of nurserymen to plant seeds, and the efforts made by Van Mons and Knight to obtain new varieties by hybridising and impregnation. Of the ten new sorts produced by Knight, which are considered good in England, only one, the Dunmore, is excellent here. Nature and accident have given us better sorts—witness, the Washington, Sheldon, Seckle, &c. These accidental seedlings certainly did not go back. Mr. Dana, of Roxbury, having determined to attempt to produce new seedlings, planted seeds of the Seckle, Beurré Diel, the Bartlett, and others of the best varieties he could obtain, and the result was that he got six excellent new Pears. This on exhibition is one of the number. It was first brought into notice in 1854, and known as No. 16. It was pronounced so remarkably excellent by the Massachusetts Horticultural Society that Mr. Hovey purchased the original tree for the purpose of propagating from it. This is the first year in which he has obtained fruit to any considerable amount. One of the peculiarities of this Pear is that it never rots from the core, but, like the Apple, decays first upon the surface. The bearing quality of the tree is as good as the Buffum. It has somewhat the habit of the Seckle, but this tree is more vigorous. It has thick, heavy foliage, and no disease. The fruit is about the average size of the Winter Nolis. The tree grows well both as a standard and dwarf. Mr. Hovey exhibited another Pear called the Caen de France, which was introduced to this country from Van Mons in 1835, and is still very little known. It is much better than the Winter Nolis, and twice as large. It has one fault—it is slow to come into bearing."

To the reader of gardening periodicals published in the United States, or even of the newspaper press of that country, it must have often occurred how very far in advance of us our transatlantic brethren are in the pursuit of pomology as an art. We may, or may not, excel them in the scientific accuracy of our experiments; but the intense interest manifested in the production of new varieties, and the accurate mapping out of the districts where such and such first-class sorts may be grown in perfection, accomplished through the medium of their numerous pomological societies, betoken a more widespread sympathy with fruit and fruit-growing than we find amongst ourselves. Much of this is attributable, no doubt, to the fact that in even the Northern States the average maximum temperature of the summer is never so low as to endanger the quality, and in particular the flavour, of our commoner fruits. Americans, at least in the cities and their neighbourhood, are large consumers, and, therefore, large producers of fruit. In the hot days of their hot summers the Strawberry, Blackberry, Raspberry, and Peach are welcomed by thousands in a way that we, in a milder climate, can form little conception of; but even in the depth of winter, when the thermometer sinks again and again to zero or under, the Apple is a household fruit long after it has disappeared from most English desserts. Had we the comparatively cloudless sky of the States, and the consequent improvement in the flavour of our fruits, the Apple and Pear would more frequently than at present form a reality on our tables at every meal, to the manifest improvement of our health, instead of being only produced at dessert as a provocative to appetite at a time when all the digestive powers have already exclaimed, "Enough!"

One advantage America possesses is the evident facility with which good new varieties are produced compared with the reported paucity of their production among thousands of seedlings here and on the continent. Somehow, it would seem the sporting of the Apple in the United States, after its introduction from Europe, took entirely new and very favourable directions, resulting in at least one quite novel strain, to which we have nothing approaching among the Apples of Europe. It is worth the attention of pomologists to ascertain whether, by subjecting fruits in their growth to occasional outrageously artificial conditions, some out-of-

the-way sport might be induced in the seedlings produced from them. May not orchard-house fruits work wonders in this way?

From Australia, I have no doubt, we shall ere long have some splendid acquisitions in new seedlings, the result of the climate our English fruits experience there; but there is a melancholy certainty that not a tithe of them will reach perfection in the average of our summers. After all, it is on ourselves we must rely.

A seedling fruit society seems, to me, to have a very clear and important mission marked out for it, and only requires six hearty lovers of good fruit, who are willing to spare a little trouble, to set it a-going. I feel sure the results of a very few years would abundantly reward all who helped the good work forward. A Ribston Pippin in May, a Marie Louise for the warm days, that will at times make us long for early Strawberries a full fortnight before they are comestable at even 2s. a-quart!—these, or something quite as good, are perfectly within the reach of careful seed-sowing, and patient waiting for results. This work must be gone into some day, and why not in this good new year as well as any other?

A very interesting paper might be written on the contents of an American fruit-nurseryman's catalogue. There is some well-defined law regulating the changes which varieties undergo when transplanted to new climates; but there is, at first sight, such an admirable confusion in the tricks they play, that it will be long ere anything to be depended upon in the way of explanatory theory will be evolved. Indeed, I question much if it would not be profitable for each country to exchange with the other all the seedling fruit trees which had, in the respective countries, been proved to be thoroughly useless. I am confident that each would find some first-rate prizes among the other's rejections. Why should Sturmer Pippin and Herefordshire Pearmain be welcomed in the United States as first-class for the dessert, whilst Kerry Pippin and Golden Reinette are rejected as almost worthless? Even the Ribston and Golden Pippins are only very inferior in New York or Ohio, and Marie Louise scarcely worth growing.

To a lover of good fruit it is pleasing to trace the origin of valued varieties to their source, and year by year we are adding a few to those we may thank our American cousins for. Our own Peaches and Cherries bid fair to be half supplanted by the new importations, but to our lists of other fruits the additions from that quarter are only few. In Pears the Seckle is the only one that has as yet received a first-class certificate from the English fruit-grower. In Apples we have Early Harvest, Mother Apple, Franklin's Golden Pippin, Northern Spy, Melon Apple, and perhaps a few others. In Plums we have Jefferson and several other first-rate sorts. In Gooseberries we are unrivalled by the produce of either the continent or the Western hemisphere; and, therefore, by a strange confusion of thought, similarly exercised in relation to other things than fruit, pass scornfully by what we should rear very delicately were they not so thoroughly un-aristocratic as to grow quite delicious without other help than the summer sunshine, strained to dilution through our own dull atmosphere. I have seen and heard a good deal of Black Hamburg Grapes, but have yet to feast my eyes and taste upon any that shall half reach the excellence of the produce of some very plebeian Gooseberry bushes within view from my window.—
FRUIT-EATER.

LILIUMS AND GLADIOLUSES.

A common mistake in the culture of Liliams is putting too many in one pot. I was struck with an article by one of your contributors, in which he recommends about half a dozen to be put in one pot. I smiled when reading it, for I gave up this practice some years ago. In a 10-inch pot I rarely put more than one bulb, and in a No. 4 pot two, and these I plant in a compost of one-third good sweet dung (if a few old dry "cow patches" are to be had all the better), and two-thirds new soil, with a sprinkling of sand. I plant at different times, as recommended by another correspondent, to insure continuous bloom, and water with liquid manure weekly after the leaves show above the soil. I think the bulbs should be planted at least 2 inches

below the surface. Any spare bulbs I plant in good ground in the open air, and by putting 5 or 6 inches of soil over them I do not find the frost injure them.

At Ashton-under-Lyne, where we certainly can grow *Liliums* and *Gladiolus* well, I have seen scores of *Liliums* with from ten to eighteen flowers on a spike. I had last summer, in the conservatory, spikes thicker than my thumb, with from twelve to sixteen flowers on each; but almost everybody here believes in treating these bulbs the same as if they were growing a large Cabbage—viz., plenty of room and good stuff for them to feed on. My stock of *Gladiolus* consists of about fifty-eight sorts, but Mr. Tipping, an old amateur florist, has upwards of one hundred, and well indeed he grows them. As to his practice, I cannot speak further than that he feeds them well. My own practice is to give them plenty of good manure. To two beds 7 yards long by 2½ broad, I this year added to each two good barrow-loads of old Mushroom-bed mould and one bag of cocoa-nut fibre, and worked the whole well with a four-tined fork. The dung from the Mushroom-bed I allowed to lie on the bed to sweeten for some weeks before it was worked in. I invariably plant my bulbs in pots about the middle of March, and use 24's or 32's. This year I made a compost of cocoa-nut fibre, new soil, and well-sweetened dung, in equal quantities for planting them in. This way of growing the *Gladiolus* of course finds me plenty of work, and in the present year I intend to plant as soon as possible in the open ground some of every sort that I have plenty of. I transfer the potted bulbs to the open ground in May. By the above mode of starting them they flower sooner, for many of the sorts would scarcely throw up their bloom-spikes before the season was too far gone. I wish our cross-breeders could obtain a race possessing the hardiness of *Gladiolus communis*. I have probably upwards of a thousand bulbs of that sort.—JOHN HAGUE, Ashton-under-Lyne.

PRODUCT OF POTATOES.

I THINK Mr. Abbey could hardly have read my former communication with sufficient attention before commenting upon it, or he would not have so much misunderstood its purport. In these days of rapping, table-turning, the Davenport Brothers, Professor Pepper's ghost, and divers spiritual and other manifestations and delusions, I do not know that I am not to assume it as a compliment when he seems to suspect me of being of a somewhat incredulous turn of mind. I beg him, notwithstanding, to believe that I am not incapable of accepting facts on trustworthy evidence. I freely accept the forty-fourfold return of "W. W. H.'s" blue Potato, not exactly by reason of Mr. Abbey's argument, but because "W. W. H." assures us there was no error, and you, Sir, vouch for his responsibility. I accept also as fact Mr. Abbey's correspondent Mr. Lupton's two wonderful roots of 43 lbs. and 41 lbs. respectively, simply because I have had credible information of a still higher result than either.

But all this has not the slightest bearing on the drift of my observations. Certain experiments were published in your Journal by "W. W. H." which gave an enormous superiority of productiveness to a certain seedling Potato. I forwarded to you another set of experiments made with great care and accuracy on a larger and, as I thought, therefore a more reliable scale, wherein the same seedling stood much below some older sorts, and below other seedlings of the same growers, in which respect they coincided with some experiments published by those growers themselves. My sole object was to show that Paterson's Irish Blue was far from always maintaining the superiority attributed to it. I ventured also to express my opinion that some error might have arisen from this circumstance, that on the data before us the produce ascribed to these Irish Blues was at the rate of more than 50 tons per acre.

Now Mr. Abbey seems to impugn, I will not say the fairness, but the propriety of my adopting this assumption on two grounds—because I do not say what precise distance is meant by the words "ordinary distance of sets," and because I do not, any more than "W. W. H." or "UPWARDS AND ONWARDS" give the weight of the sets. If Mr. Abbey

would not, I feel sure, have said this. I did give the weight of the sets, and if he had continued his own quotation from my letter, "The quantity of seed for an acre at the ordinary distance with rows 3 feet apart, &c," only three words farther; if the "&c." had been made to follow instead of go before the next three words "is, we see," he would not have failed to observe that I had precisely stated in the table above the weight of the sets used, to which the words "we see" (the quantity being then repeated) were an unmistakable reference.

I omitted to specify what I considered the "ordinary distance in the rows" to be, because it was not necessary to my argument to specify it. The quantity of the ground and the weight of the sets being given, nothing more was required to show that a forty-fourfold return would give upwards of 50 tons. I am not aware that it ever for a moment entered into the head of any one of us to inquire, as Mr. Abbey imputes to us, "what kind of Potato gives the greatest yield from the least seed," instead of the greatest yield from the same ground. Neither can I see anything in "W. W. H.'s" letter or my own which should lay us open to such imputation.

As to the suggested possibility that one quantity of these sets might all weigh 4 ozs. each, and the other all 3 ozs. each, I am sure Mr. Abbey will excuse my entertaining the question. The sets in both instances were had from Messrs. Paterson themselves, and there is not the slightest ground for believing they differed on the average. If "W. W. H.'s" 14 lbs. of these sets had occupied a much larger space of ground than the rest there cannot be a doubt he would have said so. In the absence of anything exceptional being stated we can reckon only by the conditions before us. We may abandon forming conclusions altogether if we must first admit into our premises every possible variation the imagination can suggest.

When Mr. Abbey says "Experiments of this kind are apt to lead to an incorrect conclusion when the produce per acre is calculated by the produce of a certain weight of sets without stating the extent of ground occupied by them," he states the exact contrary of my statement, but he takes up precisely my position. I hope he will allow me to point out to him that this is but a repetition of my own observation when I said "The only reliable comparative results from experiments of this kind would require not only equal weight but equal size or number of sets," the number of the sets of course determining the quantity of the ground. I would beg leave again to add "The larger the area the nearer the approximation to truth." In fact I think so little can experiments on a small scale and under exceptional circumstances be relied upon, that even the two monster roots grown by Mr. Lupton do not flatter me with hopes of 50 tons per acre. Certainly Mr. Abbey's other averages do not encourage the expectation. Still experiments of this kind are very valuable if they are conducted with accuracy, several times repeated, and conclusions from them not pushed too far. They may then often lead to useful results. They might, for instance, unravel one important point to which Mr. Abbey adverts—the distance at which Potatoes may most productively be set. For myself, I have been for some time of opinion that if we are to make any nearer approach to the 50 tons per acre it must be in the direction of Mr. Lupton's experiments detailed by Mr. Abbey. For several years I have grown my garden Potatoes in something approaching that style of cultivation. I borrowed the idea from a practice I observed in parts of Cheshire and Shropshire, where it is called clumping. Each clump occupies a square yard of ground. The set is placed 2 or 3 inches above the level of the soil, and on whatever manure is used. A mound of earth is raised over it. When the stems are about 8 inches high they are bent down gently, and retained in that position by a covering of soil. As the growth proceeds more earth is added, and the clump enlarged. On this plan I have invariably had larger Potatoes and a better crop from the same seed than from rows at any distance, and I have always found them prove free from disease. The tops of the mounds are never over-shadowed by the foliage, but are freely exposed to the action of sun and air, from which I assume the chief benefit arises. As yet I have myself tried the system only in my garden, but

named, and, I have been assured, with advantage. In the next season I intend to test the plan in field culture against the ordinary rows. The calculation, of course, is whether the diminished number of roots and some increase of labour will not be more than compensated by the more abundant crop. The quantity of seed saved would go far I apprehend to pay the extra labour.

In one respect Mr. Abbey will, I am sure, agree with me—viz., that the free discussion of this and similar topics is not an unimportant step towards further progress.—**AGRICOLA.**

MORE ABOUT POTATOES.

I HAVE been asked whether I consider Mr. Hogg's Coldstream Potato suitable as an open air variety for garden culture, as well as for an orchard-house? I reply, that if I consider it eminently suitable for orchard-house culture, I consider it pre-eminently so as an early garden variety. In fact, my chief trial with it was in that way, for it would never do to keep it growing in an orchard-house so late as the 19th of July, the period I stated I had taken it up. When I mentioned that date I concluded that it would be understood to refer to the open ground. I intend for the future to confine my first earlies to the orchard-house, as being a more convenient and interesting mode of culture than growing them in a frame; but there is no royal rule for planting Potatoes. I daresay there never will be.

As regards the omissions complained of at page 10, I cannot suppose that Mr. Abbey would care to bear in memory what I write, so I must beg to state, that I have met his views several times over in my papers on the cultivation of the Potato, and to repeat, that for the open ground, I give 36 inches between the rows of early Potatoes, and 42 inches for the late sorts. The sets of the former I prefer to weigh from 2 to 3 ounces each, and those of the latter from 3 to 4 ounces—viz., medium-sized old Potatoes. The distance I allow between each set, judging as I plant them, according to their size, is for the early varieties from 12 to 16 inches, and for the later sorts from 15 to 20 inches. Results by weight, measurements, &c., for the system in which I grow Potatoes, sufficient to suit the customs of most localities, can be found on referring to Nos. 48, 90, 100, 140, 141, 163, and 164. Of late years, in order to arrive at just conclusions, I have not deviated from my method of planting, and also for the very satisfactory reason that the plan suits me well.

The mere coddling of a few sets in very rich soil to produce a large quantity of, possibly, uneatable tubers, merely "to astonish the natives," or for exhibiting purposes—albeit, praiseworthy, is no example to be followed in general cultivation. My advice is given to work for a crop, to grow as many Potatoes as possible upon the ground for years in succession, and for the tubers to be good flavoured and good favoured.

The result of Mr. Francis Lupton's experiment is very interesting, and I am glad Mr. Abbey has put it on record. Amongst some notes I took at the Royal Horticultural Society's Show on the 7th of last month, which I now take the opportunity to send you, is an account of another extraordinarily productive root, of what I will call a Brighton Regent, as it is in form exactly like some Potatoes I brought from thence into this county nine years ago, where it has held its ground amongst the cottagers ever since.

"Report on the growth and produce of a single Potato grown at the establishment of Messrs. Spary & Campbell, Queen's Graperies, Brighton. The tuber from which the plant was produced weighed 2 ounces in December, 1863, was planted to the depth of 10 inches at the time the border was manured in the latter end of April, 1864. It presented two shoots above the surface which grew very strong and vigorous through the spring and summer. By October the haulm extended 12 feet in diameter, being rather more than 36 feet in circumference. On the 3rd of December the crop was dug up and produced 268 Potatoes, weight 39 lbs. 3 ozs., or six gallons.—EDWD. SPARY, F.R.H.S."

I take the number of tubers produced by that single root to be the largest on record. The haulm, however, extending over so large a surface is fatal to the largest acreage pro-

duce. Now, Mr. Lupton does not give us the weight of his sets, nor the extent of surface his Potato-haulm occupied, which would certainly be much more than "4 feet distant each way," as he states the stems were brought down and spread out. My Negro root which produced me 16 lbs. of Potatoes, was situated at the end of a row or ridge (a good representation of which is given by "A CONSTANT READER," at page 6, excepting that I finish-off my ridges at planting-time flatter at the apex), and it occupied a square yard of ground, being at the rate of 34½ tons per acre. For the large-topping sorts I drive down some stakes and strain a line or two of tarcord attached to them on each side of the ridges; this keeps the haulm up in the air instead of sprawling upon the ground. So, unless I can learn how many square feet of soil the haulm of the best root of Mr. Lupton's Potatoes spread over, I do not feel inclined to consider the produce of my root of Negro to be beaten per acre. I sent you some tubers of the root, as also some of the Freebearers, Prolifics, Gryffe Castle Seedling, Walker's Regent, and Scotch Rough White, which grew in the same ridge. Their sets would weigh between 4 and 5 ozs. each. I did not weigh them, and they were planted 20 inches apart. A ridge of Fortyfolds came next to them, the haulm of which is moderate and does not require stakes and cord, and then came a row of Sutton's Finest Regent, which did require cords and stakes. I always take care to plant a second early medium-foliaged kind between gross toppers—viz., in alternate ridges, which allows the sun and air to play between the foliage more freely, and as the former are off the ground some weeks before the latter, light is still more freely admitted to the Cabbage tribe in the trenches. On the other side of the Negro ridge, an Asparagus-bed ran its entire length. We are now, and have been for some time using Brussels Sprouts from the trenches, and Broccoli and Scotch Kale are to follow. Turnips are growing on the tops of the ridges where the Potatoes grew, and I anticipate nice boilings of greens from them before long.

Respecting some other noteworthy varieties which I saw at the Royal Horticultural Society's Show, December 7th, perhaps it may prove useful to some of your readers if I say something as to their appearance and desirability, at the same time I leave a large margin for others to differ from me in opinion.

On Mr. James Veitch's stand there was a good collection. The samples were fine, and had apparently been grown in rich dark soil, which tended to add nothing to their appearance. The Prince of Wales, a rather flat pear-shaped Kidney, was a very promising-looking Potato. (In another part of the Show, Mr. Veitch was awarded a first-class certificate for a fine plate of this.) A Dutch Prolific, in form much like the Red Regent, but blotched slightly with white, I should consider an improvement on the latter much-grown variety. The Lapstone Kidney was here very fine.

In Class 4, a Potato gaining a second-class certificate, which deserved a first-class, was named Huntingdonshire Kidney. I proposed to Mr. Daintree two years ago to call his newest seedling by that name, and at a first glance I thought he had done so and sent a sample to the Show; but no, the exhibitor was J. Taylor, cottager, Hunton Bridge, Watford, Herts, and curiously enough I was afterwards informed by a gentleman's gardener who got them entered, that Mr. J. Taylor has a brother living near St. Ives, in Mr. Daintree's neighbourhood, from whom he received the sort. They were in form like a medium-sized, perfect-shaped Lapstone, and on splitting one with a knife every feature of the new seedling presented itself, though since I have become a grower of Potatoes from seed, I am cautious how I conclude that one variety is the same as another from a similarity of tubers. A year's growth side by side might prove them to be different. I thought them the handsomest sample in the whole exhibition.

Mona's Pride, also a Lapstone-looking Kidney, took my attention. It gained a second-class certificate, and was shown by Mr. R. Budd, gardener to the Earl of Darnley, Cobham Hall.

Burghfield, a pear-shaped Kidney, was very fine. It gained a third-class certificate, and was shown by Mr. Lord, gardener to M. G. Thoyts, Esq., Reading.

Lapstone Kidney I mention as being the fairest if not the finest sample I ever saw. For form they ran slightly

out, but they gained deservedly a first-class certificate for Mr. Frisby, gardener to H. Chapman, Esq., Sleaford. If Mr. Frisby should see this, might I request him to let us know the description of soil that he grew them in?

Tansell's Seedling, which received a first-class certificate, was a handsome, white, round Potato, which I have down in my note-book as a desirable variety; as well as Early Ten-week, a medium-sized round, with a pretty pink eye—one of those firmly-mealy class of tubers, I suspect, so much approved of now-a-days. Both the above sorts were shown in the collection of Mr. Moffat, gardener to Viscount Maynard, Easton Lodge, Dunmow, Essex.

A good stamp of Potato, I should say either for table or cattle, and gaining a third-class certificate, was shown by Mr. J. Masters, West Hill, Highgate. It was unnamed, and in form like Sutton's Finest Regent. I took it for that desirable variety.

Early Frame, not the small Early Frame I remember from boyhood, but a large, rough-jacketed, Regent-looking Potato, was doubtless good either for table or cattle. Although I have partly vowed not to grow this class of tuber any more in this garden, I feel almost inclined in regard to the above, to break my vow. It was exhibited by Mr. J. Veitch, Royal Exotic Nursery, King's Road, Chelsea, and received a first-class certificate.

Morning Star, worthy its poetical name, and quite deserving a certificate. A handsome, medium-sized, round Potato, shown by Mr. S. Westbrook, Abingdon.

Courtenhall Seedling, a flattish-round, medium-sized Potato, and the finest sample I ever saw of Sutton's Early Racehorse, were to be seen at the foot of Messrs. Sutton and Sons' glass case containing seeds, which was a show of itself.

Of the coloured class of Potatoes I at sight singled out as kinds I should desire:—London Red, a self-colour of that hue, round, and medium-sized, shown by Mr. Frisby, gardener to H. Chapman, Esq.; a Bluish-self, exhibited by Mr. R. Heather, gardener to R. Pulford, Esq.; and a new Potato, running out in form from pear-shaped to oblong, and stated to have been brought from Australia, by Captain Walter, and as being a "very prolific, excellent Potato."

The above are what I considered the pick of a very good show—that is, in the way of what to me were novelties; but I shall always consider a show of Potatoes incomplete till we can arrive at some palatable testing process, and I for one do not care ever to exhibit the tuber again unless a cooking process, for new table sorts at least, can be added, and which I hope will eventually be the case, and why not? Fruit is very properly tested for flavour, and of quite as much consequence is it that the Potato should be so also. I know if this could have been done at the Royal Horticultural Society's Show, I should have been there as an exhibitor, and I would have paid our housekeeper's expenses to London in order that she might have been on the spot to have cooked the Potatoes. A leading Society ought to feel sufficiently interested to provide a room, fires, and saucepans, and then the judges would be able to inform the public which sorts were best cultivated for flavour, and most worthy to be grown. The only thing to fear would be, that the judges of the fruit would want the cooking test to be applied in their department also. But be that as it may, it would create in the women an interest to cook our Potatoes well all the year round, when they knew that their science was likely to result in a trip to London. I am certain that no one would be the loser, only, unfortunately, the Council of the Royal Horticultural Society as at present constituted would not feel sufficiently interested, I fear, to entertain the idea.

There were some very fine examples of cattle Potatoes exhibited at the Smithfield Cattle Show, which was a very good one, and one may say of it, that it has safely established itself at Islington for the future. I noted monster Walker's and Dunl ar Regents, on Messrs. Gibbs' magnificent land of roots, and a seedling from the Fluke, having the shape of its parent with a yellow cast of countenance, purported to be grown by F. Murton, Esq., Ashford. There were also two other Fluke seedlings suitable for the table called, the one "Fluke Seedling, late," and the other "Milky White, earliest." Daw's Matchless, a large Fluke-shaped Potato; and Dundee Kidney, a red, many-eyed, oblong variety were shown, on Messrs. Carter's stand Sutton's

Finest Regent told well for itself amongst many other well-known varieties, on Messrs. Sutton & Sons' fine stand of roots.—UPWARDS AND ONWARDS.

THE WEATHER OF 1864 IN LANCASHIRE.

January.—This was a cold dry month. The mean temperature was 35°.03, or 2°.098 below the average of the last ten years, and 5°.62 below January 1863. The 7th was a remarkably cold day, the maximum temperature being only 19°, and the minimum 16°; excepting the 24th and 26th December, 1860, it is many years since we had so cold a day. The amount of rain was 1.21 inches, being 0.91 inches less than the average of the last ten years. It fell on seven days, which is 6.8 days less than the average. The barometer on the 4th at 10 A.M. stood at 30.55 inches, which was the highest point it reached on any day during the year. The prevailing winds were from the S.W.

February was also very cold. The mean temperature was only 34°.74, being 2°.478 below the average, and 6°.4 below February of last year. It was the coldest February we have had since 1860, on seventeen days it was below freezing-point. The amount of rain was 3.45 inches, or 1.639 inches more than the average of the last ten years; it fell on thirteen days. The prevailing winds were from the east.

March.—The temperature was still below the average of the last ten years 1°.449, the mean temperature being 39°.48. Rain fell every day from the 4th to the 14th, when the weather became fair, and we had some beautiful weather, with frost at night, so that by the end of the month gardening and farming operations were in a forward state. The amount of rain was 2.80 inches, being 0.065 inches below the average. The prevailing winds were from the east.

April was very dry and warm, the mean temperature being 47°.68, or 1°.536 above the average of the last ten years. The thermometer only once indicated as low a temperature as 32° on the night of the 13th. Rain fell on only eight days, the amount being 1.26 inches, and 0.815 inches less than the average. The prevailing winds were from the west.

May.—This was the most remarkable month on record for its extreme heat and cold. On some of the days from the 15th to the 21st the thermometer indicated 84° in the shade, and 127° in the sun, which was the greatest heat ever known here in May. The nearest approach to it was in 1858, when the thermometer indicated 82° in the shade, and 116° in the sun. This heat brought vegetation very rapidly forward, but the frosts at the end of the month disappointed all calculations of an early harvest, and did very serious damage to the Potatoes, Kidney Beans, &c. The mean temperature was 55°.87, being 2°.241 above the average. The amount of rain was 3.66 inches, or 1.456 inches above the average. It fell on twelve days, but only on one day from the 7th to the 27th. The prevailing winds were from the east.

June was wet and cold, and the frost on the 1st cut down the Potatoes, and even the young shoots of the Ash. Potatoes advanced in value fifty per cent. The greatest cold registered before in June since 1794 (taken at the Royal Society and Royal Observatory) occurred in 1797, 40°; 1802, 40°; 1841, 40°.3; 1848, 38°.7; and 1849, 38°.6. The mean temperature of the month was 58°.32, being 0°.302 above the average; the day temperature being 10°.37 higher than June 1863. It rained on twenty days, the amount being 3.98 inches, or 0.495 inches more than the average. The prevailing winds were from the west and south-west.

July.—This was a dry warm month. The mean temperature was 61°.95, being 1°.555 above the average. Rain fell on six days only, which was the least number of days in any month during the year. The amount was 1.59 inches, or 1.278 inches less than the average. The hay harvest was secured in prime condition, but very light on some grounds. The prevailing winds were from the south-west.

August.—This was again a very dry month, but the temperature was 1°.584 below the average of the last ten years, the mean temperature being 58°.47. Rain fell on twelve days, the amount being only 2.20 inches, or 1.98 inches below the average. The drought was very severely felt in some parts of England, many brooks and springs being quite dry, that had never been known to be dry before in

the memory of man. Water was sold for a penny a-gallon, and cattle driven some miles to water; mining and other operations were almost at a stand for the want of water; and in some parts of Lincolnshire the grass was almost burnt up, and they had to feed the cattle with the crops that were growing for their winter supply. The corn harvest was secured in fine condition, but Turnips were quite a failure in some parts. The prevailing winds were from the north-west.

September.—We had in Lancashire a copious supply of rain, which fell on twenty-two days, the amount being 3.39 inches, or 0.043 inches less than the average. The mean temperature was 55°.12, or 0°.484 above the average. The prevailing winds were from the south-west.

October was very dry. Rain fell on only nine days, the amount being 1.88 inches, or 1.429 inches less than the average of the last ten years. The mean temperature was 50°.32, or 0°.648 above the average. The prevailing winds were from the east.

November.—This was a very mild wet month. The Dahlias and other plants had received no check until the night of the 2nd, when they were all cut down by the frost. The temperature on three nights only was down to freezing-point. The mean temperature of the month was 41°.92, or 1°.86 above the average of the last ten years. Rain fell on fifteen days, the amount being 2.97 inches, or 0.639 inches above the average, it being the first month above the average since June. The barometer fell to 29.48 inches at 4 P.M. on the 14th, which was the lowest point it reached on any day in the year. The prevailing winds were from the east.

December was very dry. Rain fell on ten days, the amount being only 1.89 inches, or 0.603 inches below the average of the last ten years. The mean temperature was 38°.60, or 0°.275 below the average. The prevailing winds were from the S.E. and S.W.

The mean temperature of the year was 48°.125, or 0°.108 above the average of the last ten years. The total amount of rain was only 30.28 inches, or 2.894 inches below the average. It fell on a hundred and forty-eight days, or 32.3 days less than the average of the last ten years. The prevailing winds were from the east on seventy-seven days, and from the south-west on seventy-three days.—WILLIAM CARR, Clayton Bridge, near Manchester.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

LIMNOCHILUS HORSFALLII (Mr. Horsfall's *Limnochilus*).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. Native of Old Calabar, Western Africa. Flowers purple and pinkish white.—(*Bot. Mag.*, t. 5486.)

DOMBEYA BURGESSII (Miss Burgess's *Dombeya*).—*Nat. ord.*, Byttneriaceæ. *Linn.*, Monadelphia Polyandria. Native of Natal, &c., in South Africa. A charming conservatory dwarf tree 8 to 10 feet high. Flowers in corymbs, white with crimson rays.—(*Ibid.*, t. 5487.)

DENDROBIUM PARISHII (Mr. Parish's *Dendrobium*).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Diandria. Native of Moulmein. Flowers rose colour.—(*Ibid.*, t. 5488.)

PROUSTIA PYRIFOLIA (Pear-leaved *Proustia*).—*Nat. ord.*, Compositæ (Mutisiaceæ). *Linn.*, Syngenesia labiatifloræ. Introduced from Chili by Messrs. Veitch & Son. A greenhouse climber rendered beautiful by the rosy-coloured feathered pappus on the fruit. Flowers in July.—(*Ibid.*, t. 5489.)

SWAINSONIA OCCIDENTALIS (Western *Swainsonia*).—*Nat. ord.*, Leguminifera. *Linn.*, Diadelphia Decandria. Introduced by Mr. W. Thompson, of Ipswich, from Western Australia. Flowers purple; "cannot fail to prove a great ornament to our greenhouses."—(*Ibid.*, t. 5490.)

VALLOTA EXIMIA.—Scarlet, with whitish throat. Mr. W. Bull, King's Road, Chelsea, had awarded for it a first-class certificate by the Floral Committee of the Royal Horticultural Society.—(*Floral Mag.* pl. 225.)

CELEBRATIS JACKMANNII.—We noticed this last month.—(*Ibid.*, pl. 226.)

CAECOLABRIA.—*Bird of Paradise*. Flowers crimson edged with orange. Will be sent out next spring by Mr. Williams, Paradise Nursery, Holloway.—(*Ibid.*, pl. 227.)

THREE CARNATIONS.—*Delicatissima*, pink, barred with crimson. *Victoria*, light crimson, flaked with dark crimson. *Princess Alice*, bright yellow, flaked and barred with crimson. In the possession of Messrs. E. Henderson & Son, Wellington Road Nursery.—(*Ibid.*, pl. 228.)

PELARGONIUM.—*Indian Yellow*. "The acquisition of new colours amongst the varieties of so popular and useful a flower, cannot be otherwise than agreeable to those who follow up the parterre system of flower gardening. So much progress, indeed, has been made in this direction, that the term "Scarlet Pelargonium" is now made to stand sponsor for varieties furnishing a long catalogue of colours, running through the various shades of scarlet, crimson, rose, pink, salmon, and white. With this progress the name of Donald Beaton will ever be associated in the annals of flower gardening. For many of the later years of his life he devoted himself with much zeal to the cross-breeding of the Pelargonium, mainly with the view of raising new varieties adapted to supply the wants of the flower gardener; and we need do no more than refer to Stella, Cybister, and Lord Palmerston, to show that his labours were rewarded by a fair share of success. Up to the close of his life Mr. Beaton continued these cross-breeding experiments, and a large number of seedlings, bloomed and unbloomed, were left at the time of his death. From these, starting from the vantage ground already gained, a great further advance was expected, and has since been realised. Some few choice sorts had been selected by him for distribution shortly before he was taken from amongst us, and among them was the variety called Indian Yellow, of which we now give an illustration. The whole of the seedlings just referred to, bloomed and unbloomed, have passed into the hands of Mr. W. Paul, of Waltham Cross, and it is from the plant as bloomed by him during the past summer that our drawing has been made; while among the more juvenile batch of seedlings many choice novelties have appeared, of which the public will hear more in due time. Thus, from the ordinary race of scarlets, the bedder-out will have acquired amongst Pelargoniums, besides the pinks, roses, salmons, and whites he already possessed, a variety of tints which will be invaluable to him—passing off in one direction towards orange and yellow, and in the other towards purple-rose or magenta. These novelties, many of them, combine the prolific bloom of the Nosegay race with the better-shaped blossoms of the more ordinary kinds; and it is to this race of what may be called semi-Nosegays that our present subject belongs.

"Beaton's Indian Yellow Pelargonium is a variety of free growth and of dwarfish habit. It has, as will be seen, zonate leaves, and its flower-trusses are well furnished; the latter were, indeed, rather thin at the time of its first appearance in public, but, as the more natural season of bloom came round, this meagreness was altogether lost, and the plants bore well-furnished trusses as much as 4 inches across, and containing fifty or more of the large well-formed blossoms. The colour has a strongly marked shade of Indian yellow, which is at once apparent when the plant is brought into contiguity with either a pure scarlet or one of the magenta-tinted race. The colour may be described as an orange scarlet, with a suffusion of golden yellow, or a wash of the same colour overlaid. The variety, indeed, is a most unexpected and valuable addition to the materials for the parterre, all the more welcome as being the first of this colour which will be placed within reach of the flower gardener."—(*Florist and Pomologist*, iv. 1.)

TASMANIAN GARDENERS' AND AMATEURS' HORTICULTURAL EXHIBITION.

THE spring show of flowers, fruits, and vegetables, under the auspices of the Gardeners' and Amateurs' Horticultural Society, took place in the Alliance Rooms, Hobart Town, on the 26th of October, 1864, and was in all respects successful above the average of these periodical displays. The collection of flowers was excellent both as regards the number, quality, and variety of the exhibitions, and the same remark may, with almost equal truthfulness, be applied to the other divisions of the Show. The fact that the season is what is generally described as a late one, rendered the floral collection and, in a minor degree, the vegetables,

less attractive than under more favourable atmospheric conditions precedent they would have been. In the floral department one of the first objects to attract the notice of a visitor, was a very beautiful *Torenia pulcherrima*, a new variety of stove plant, contributed by Messrs. Osborne and Sons. On the same table, and on either side of the handsome plant just named, were two large cases of cut flowers very artistically grouped, and the property of Messrs. Osborne and T. Johnson respectively. Both collections were very pleasing and of such nearly equal merit as to occasion some trouble to the Judges in arriving at a decision upon their merits, but the palm of victory was finally awarded to the Messrs. Osborne. On the first stand facing the doors stood a beautiful and valuable collection of twelve greenhouse plants, for which the Society's silver medal was most worthily bestowed. The next object to catch the eye was a magnificent *Strelitzia reginae* exhibited by the Messrs. Osborne, and which constituted one of the leading features of the Show. In the Amateur class, Mr. Johnson deservedly obtained a first prize for a handsome collection of six greenhouse plants, amongst which an *Azalea* was conspicuously charming. Amongst the cut flowers, all the collections of *Roses*, *Anemones*, and *Tulips* were disqualified from receiving prizes on the ground that they were not in accordance (as regards number of blooms exhibited) with the Society's schedules. Of the first-named class Mr. Johnson's were decidedly the best in the room, whilst another collection (for exhibition only) by Mr. Luckman, of Sandy Bay, possessed considerable merit. A box of *Anemones*, also transmitted for exhibition only, by Mr. Thos. Bentley, deserved commendatory mention. The *Tulips* of Mr. Johnson and of Mr. Smith (nurseryman) also merited favourable notice.

In the class for fruits a couple of very fine *Pine Apples* were shown by the Messrs. Osborne, some excellent *Pears* by Mr. Thomas, and some *Black Achan Pears* by Mrs. W. Lindsay. Amongst the *Apples*, the *Sturmer Pippins* of Mr. Smith, and the *Newtown Pippins* of Mr. J. Dickenson, were the most worthy of praise.

In the vegetable division, the Society's silver medal, for the best collection, was given to Mr. Chandler, gardener to His Excellency, and some remarkably fine *Cauliflowers* were sent in (for exhibition only) by Mr. Waterhouse, of Sandy Bay, and others by Mr. J. Wilson, of nearly equal merit. Some *Cabbages* exhibited by Mr. Culf, the Hon. Secretary, and one of which weighed no less than 14 lbs., were said to be the finest ever shown at an exhibition of the Society. A collection of *Onions*, contributed by Mr. J. Dickenson, and one of *Asparagus* by the Messrs. Osborne, were also of striking excellence.

We had nearly omitted to state that Mr. Abbott, as usual, contributed from the Royal Society's Gardens, an extensive and handsome assortment of growing flowers, which largely contributed to the pictorial effect, if we may so term it, of the entire display.

[The correspondent who sent us the above report, adds that there is no other colony of the Australian group so well adapted to the pursuit of horticulture as Tasmania. In fact it bears the enviable reputation of being "the Garden of Australia;" and no one after reading the report and the list we have of prizes awarded to *Pelargoniums*, *Calceolarias*, *Petunias*, *Cinerarias*, *Azaleas*, and numerous single specimens of other plants, fruits, and vegetables would be inclined to doubt its title to that reputation.]

BEURRÉ CLAIRGEAU PEAR—MUSCAT DE SARBELLE GRAPE.

In Dr. Hogg's "Fruit Manual," first edition, he speaks thus of the *Beurré Clairgeau Pear*:—"A handsome and showy Pear, ripe in November. Its appearance is its greatest recommendation."

Two years ago I planted a bush of this sort, and I gathered from it in October this year half a dozen *Pears*, which I laid upon a shelf in my sitting-room, where a fire was kept up, and a few days ago I felt the *Pears*, and they showed no sign of ripening; but this day I tried them again, they had turned to an orange red colour, and are melting and musky, not coarse-grained, but very agreeable. I had thought of destroying the bush, or grafting it with some-

thing else, relying upon the rather unfavourable character given by Dr. Hogg; but as a *December Pear* I think it quite worth saving, and equal to most.

I do not think, too, that enough justice is done to the *Muscat de Sarbelle Grape* by Dr. Hogg. It does not certainly hang or set well, but the flavour is rich and sweet, and it is hardy and prolific. I am very sorry to differ from such a judge as Dr. Hogg, but I speak of fruit as of men—as I find them.—JAS. C. BARNHAM, *Norwich*.

[We are glad to find that *Beurré Clairgeau* succeeds so well at *Norwich*, and is not coarse-grained. It is doubtless a very handsome Pear, though, as our correspondent remarks, it is melting and musky, but very agreeable; still it will not compare in flavour with *Glou Morceau*, *Knight's Monarch*, *Moccas*, *Winter Nelis*, *Henriette Bouvier*, *Thompson's*, and many others that are in season at the same time].

ROYAL HORTICULTURAL SOCIETY.

THE second of the Saturday Shows was held at South Kensington on the 14th inst., in the same place as its predecessor—a heated room adjoining the eastern entrance and conservatory. The last Show, though small, was varied, and had a respectable appearance, but on this occasion there was very little to be seen, and hardly any one to see it. Between 3 and 4 o'clock in the afternoon, when we visited it, there were not half a dozen people in the room, and not more than a score or two in the conservatory listening to the band, which was indeed the only attraction. The objects invited were *Cyclamens*, and of these two small lots were shown. That from Messrs. E. G. Henderson, which received a first-class certificate, contained several pretty varieties, and well grown; the other, which was second, came from Mr. Aldred, Kilburn, and consisted of seedlings.

Messrs. E. G. Henderson also received second-class certificates for *Sonchus laciniatus*, with ornamental deeply cut bright green leaves; and *Senecio Ghiesbreghtii*, with large heads of yellow flowers, but rather coarse-looking.

From the Rev. George Cheere, Papworth Hall, Caxton, came a nice plant of *Mignonette*, and Mrs. Pollock Geranium, from a cutting put in in August, and kept in a cool greenhouse, the plant having its beautiful zonate markings very well developed. For both of these objects first-class certificates were awarded to Mr. Cheere.

Lastly, Mr. Meredith, Garston, exhibited splendid bunches of *Black Alicante Grape*, the large oval berries of which were covered with a dense bluish-black bloom. For this a first-class certificate was awarded. *Child of Hale*, a seedling between the *Muscat of Alexandria* and *Syrian*, and which has been already several times noticed in these columns, was also shown by the same exhibitor. The bunch was about 11 inches long, and 8½ across the shoulders.

WORK FOR THE WEEK.

KITCHEN GARDEN.

MANURING and trenching vacant ground should be proceeded with in favourable weather. The formation of new borders, and all descriptions of work requiring the removal of earth, should also be attended to. Clean plots of ground immediately the crops are off, as, if refuse is left, it only affords shelter to vermin. In mild weather the vegetable quarters would be much benefited by a dressing of salt and hot lime, repeated two or three times. This, by killing the present stock of slugs, will save much after-trouble. In dry weather stir between such crops as *Cabbage*, *Lettuce*, *Peas*, &c. *Artichokes* (*Jerusalem*), trench them out and store the best in sand for use, and replant the remainder. *Onions*, sow in a warm corner for spring use, and plant out small ones of last year's growth for the same purpose, and to bulb for kitchen use; the soil should be light and rich. *Shallots*, a healthy well-prepared situation should be chosen for them, some charred refuse applied, and the roots placed on the surface of the soil. By this treatment this useful bulb will increase most abundantly; no frost will injure it; and if worms are found troublesome at first, in displacing them, nothing more is required but a slight sprinkling of slaked lime; the roots soon push into the soil, and become firmly

fixed. *Horsradish*, this should be trenched out, the best roots stored in sand, the soil well manured, and the small replanted. In this department, as in others, alterations will occasionally be required, such as taking up and relaying Box-edgings that have become imperfect, or grown too strong and bulky, turning or surfacing walks with fresh gravel; and such jobs should be done, if possible, before the busy season.

FRUIT GARDEN.

If any planting of fruit trees remains to be done, this should be seen to very soon, and every available dispatch used to complete it. If it is worth while to occupy ground with fruit trees, and incur the expense, &c., of planting them, it is certainly worth consideration whether the ground is in the best possible state of preparation for being planted with fruit trees, and to incur any expense and trouble which may be necessary to render the soil as suitable as it can be made for the kind of trees with which it is to be planted. To do this is seldom a work involving much direct outlay; for, if the ground is well drained, little else is required except labour, as a supply of good loamy soil can generally be obtained about most places in the country. It is useless to plant trees except there is a fair prospect of their doing well; and the necessary preparations for securing this can be more conveniently, cheaply, and effectually made before planting than afterwards.

FLOWER GARDEN.

Let the most be made of favourable weather in the way of pushing forward new work, and all out-door operations. Turf, not level, is an eyesore all the season through, and it makes the mowing more tedious and difficult: hence it is worth an effort to spare time to make it level and smooth. Sweep lawns occasionally, to clear them of fallen bits of sticks, &c.; and use the roller here and on gravel frequently, to secure a firm smooth surface. If bulbs, &c., were planted, as advised, in the beds which are afterwards devoted to the usual bedding-out plants, they will now be pushing above ground, and will require a slight protection. Sawdust, leaf mould, or old tan may be put over such as the best sorts of *Anemones*, *Scillas*, *Hyacinths*, and *Tulips*, covering the surface afterwards, to resemble that of the other beds. Deciduous trees and shrubs for ornamental purposes, may be moved with safety while the mild weather lasts, and the roots protected by a mulching or covering of rotten dung; any in danger of being blown about by high winds, and their roots injured, to be supported by stout stakes. Where any shrubs, particularly choice sorts, are not growing vigorously, the extremities of the roots should be searched for carefully with a fork, and a trench, 18 inches or 2 feet wide, made around them on the outside, and fresh and enriched soil filled into the trench, in which the roots will extend and luxuriate during the summer. Although evergreens, for the most part, thrive well in loam of a middling texture, some, such as *Kalmias*, *Rhododendrons*, and other American shrubs, do best in a mossy humid soil, or peat earth; and, although deciduous shrubs in general thrive well in light loamy or sandy soils, some kinds, such as *Roses* and *Acacias*, flower better in a rich mellow loam; but whoever is curious in collections of shrubs is generally acquainted with the soils most suitable for their healthy growth.

GREENHOUSE AND CONSERVATORY.

Stagnant air will prove unfavourable to the plants blooming in the conservatory, and water settling on the flowers will soon destroy them; moderate fires, with ventilation when the weather will permit, will be necessary. Water sparingly, and damp the house as moderately as possible. Do not allow bulbs to remain in the forcing-pit after they have developed their blossom, they may be preserved much longer in the conservatory. *Luculia gratissima* should have the favoured place. *Cinerarias* will now for some time add to the gaiety. In the greenhouse, *Pelargoniums* will soon require additional pot-room. See that your specimen plants are not too closely placed. It is extremely difficult to keep plants of this sort inactive, repress very active growth by keeping them cool and airy. *Calceolarias* may be slightly encouraged to grow. Where the twiners for covering the roof are grown in boxes, or have but limited root-room, as much of the surface soil should be removed annually as can be done without seriously injuring the roots, replacing it

with some good, rich, fresh soil, and this cannot be done at a better season than the present. Attend to the training of plants on wires and trellises. Fast-growing plants, such as *Tropeolums*, will require looking to frequently. The various composts that will soon be required for potting plants will be benefited by being frequently turned over during dry frosty weather. Such composts should not be allowed to become wet either from exposure to rain or snow.

PITS AND FRAMES.

The stock of bedding-out plants should now be looked over; where anything is short remove a portion of the stock into a warm house to produce cuttings for propagation. It is often difficult to procure sufficient plants of some kinds in the autumn; and cuttings of all the more softwooded plants struck in this and the next month, and properly hardened off, will bloom equally well, if not better, than those struck in the previous autumn. It is, however, advisable to have bedding-out *Geraniums* and other woody plants struck and well established before winter.—W. KRANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Turf-pits, Earth-pits, &c.—One of the greatest drawbacks attending turf-pits, in winter, is the harbour that the dry turf walls afford to mice and rats, especially the former. The evil is increased if any old stakes or boards have been used to help to keep up the back wall: hence it is often better to dispense with the boards, so as to afford no lodging-place behind them. Even with them all will go on well enough until a sharp frost come; but then, if you are forced to have the whole covered up for a week or so, the mice will be apt to poach on your preserves, nibbling out the centres of *Cauliflowers*, and even pretty well taking away all but the outside leaves of blanched *Endive* and *Lettuce*; the more blanched the more will they like it. During the last frost we thus lost a lot of nice *Cauliflower*. Cats are a good remedy at times, but they do little good when shut up in total darkness. The old tales of cats seeing best in the dark must be taken with a certain allowance; for, though they do see well in twilight and comparative darkness, when shut up without any light they will have little but their scent and their whiskers to guide them. Traps, and phosphoric paste spread on bread and butter, are best for the common mice; but large grass mice are difficult to catch, and are generally most readily captured by fine wire snares in their runs.

Peas and Beans.—Protected those sown under protection. Will make the first sowing out of doors as soon as the ground is suitable. We think that by transplanting the first crop we gain a little in time, and we save hunting after slugs and mice in winter.

Celery.—Removed the stubble, so as to expose the heads of the *Celery*. We have not yet had frost severe enough to necessitate a covering of branches, and then some litter above it. In very severe weather, when much protection is necessary, the branches, roughly hooped, keep the weight of the litter from pressing on the foliage of the *Celery*, especially when a sudden thaw comes. When the leaves are much injured, and the leaf-stalks broken, the *Celery* is apt to decay in the bed, and in that case it will keep better if taken up rather dry, and packed closely together in a dark place. The snow falling heavily will be a good protection if frost come. We can prognosticate little at present in these sudden changes.

Potatoes.—Looked over those intended for seed, laying them open that they might not sprout too much. A nice lot in small pots, the latter filled with roots, in the Mushroom-house, are waiting for a chance to be transferred to beds, with just a little heat from leaves below them. These generally crop all the sooner from the roots being confined. At first much heat is disliked by the *Potato*, and early ones rarely crop well when it is given. Slow and sure is a better motto. To have nice young ones now, they should have been started in October. Winter-grown ones, however, are seldom nice and mealy unless they get sun; and young waxy ones, or what seem so, may be had with less trouble by planting about the middle and end of July, and keeping the produce in dryish earth.

Dwarf Kidney Beans.—Sowed in boxes in front of Cucumber-bed, to be afterwards transplanted into beds or pots. At this season we prefer pots, as they are easier managed and can be moved, where room is limited, to suit any fresh arrangement. How few can complain of an inability to fill all their glass space, the cry is all in an opposite direction. How shall we give anything like justice to the myriads of things requiring our attention, and all demanding the best positions?

Cabbages.—Stirred the surface of the soil and put some charred rubbish round the plants, which will keep some enemies from them and Lettuces; but we have also been obliged to place a net all round the quarter to save the nice young plants from rabbits and hares. This garden is surrounded by an Ivy fence which looks nice in the place, but it is a fine harbour for these marauders, and they lie so close in it that there is great difficulty in dislodging them. These thieves do eat the Cabbages, and, therefore, do a little good for themselves; but when they nip out the points of young trees, and top the shoots and leave them, they do so much mischief that no quarter should be given them. For want of netting-in a young plantation of trees, &c., we used to find a stout softish string well dipped in oil and tar, and stretched all round some 6 inches from the ground, a good preservative, taking care to run a brush with the moist material along the string when it became dry. We shall be obliged to try this and other plans again. Will any correspondent say what is the best and simplest protection from these marauders in the case of young plantations? Our experience leads us to the conclusion, that what will deter at one time ceases eventually to be any bugbear, animals in this respect becoming too much like men, who are apt to form ideas of what is vicious and wrong, in proportion as they refrain or indulge.

Cucumbers and other matters much the same as previous weeks.

FRUIT GARDEN.

Pruned, &c., in favourable weather. Watered Strawberries under cover and coming into bloom. Looked over Grapes, and examined the fruit-room. Apples are in general keeping well, as they ought to do after such a dry summer. Continued most of the operations alluded to last week.

ORNAMENTAL DEPARTMENT.

The snow will temporarily stop our work of grubbing up old stumps and roots from a part where trees have been felled, and where some more ornamental objects will be substituted. The best way to do such work, when the ground is full of roots, is not only to take up all the stumps, but to trench the ground and clear it of roots. Where the ground had previously been thickly planted, this is a very laborious operation, and takes up much time; but it is by far the best, as the decaying roots of the removed trees are apt to become harbours for various sorts of fungi, &c., that will be apt to hurt the roots of the fresh trees. The next best, perhaps, and which we will adopt to save time, is to take out the stumps that are most in our way, to chip the out-sides of hardwooded trees of the bark and a portion of the alburnum, coat these parts with tar, and then bore two or three holes about the centre of the stump. The tar will prevent the dock stooling at the sides, and the holes, becoming receptacles for moisture, will cause the dock gradually to rot away. Then take out holes from 5 to 10 feet in diameter, and fill up with good fresh soil, and plant on knolls if deemed advisable, which is suitable for most of the Pine tribe. Such fresh soil would be a necessary addition to the exhausted earth at any rate. The old soil, outside of the mounds, will derive fertility from the want of cropping; but when the roots of the young trees penetrate into the old soil, and if it be deemed necessary, more fresh soil may then be added. This hole, mound, and platform planting enables a person to do the work sooner at first, and yet gives the fresh trees a good chance, and then more help can be given at a convenient opportunity, when time can be better spared. In most gardens large jobs can hardly be carried out and thoroughly finished at once, with the usual complement of labour, when it could be comfortably managed when done at different and suitable times. The planter also get the fresh food just as they are prepared to begin.

James Holmes, Esq. - will prefer thorough trenching

at first, as then the trees might be helped continuously all the same, whether planted on the level or elevated on mounds. In the latter case, if the turf is removed, the mound can be easily widened. Would Mr. Barnes kindly tell our readers if he has yet added to the mounds of the Wellingtonia group at Bicton, the size of these mounds, and the size of the plants now? It would be interesting to many to know.

Turning-up Flower-beds and Borders.—Where these are not planted this work has been proceeded with in suitable weather. One of our points is deep stirring, and generally mixing just a little of the subsoil, stirring that, however, and leaving it mostly where it is. Last season, though so dry, Scarlet Geraniums did splendidly, never better; but in taking some up we traced the roots fully 4 feet down. All their roots were much deeper than usual. Surface-rooting plants, as Calceolarias, suffered most. Never did there seem such rooting work before. The ground turned up now seems in many cases as full of roots, as an old wig is full of hair. The turning-up of these, and the frost and the atmosphere together, will reduce these decomposing roots into manure for the future crop. We prefer ridging-up all such soil, and mixing considerably as we go along, and keeping a good portion of the surface soil at the surface, instead of turning it down to the bottom of the trench. The surface soil is the richest, and we wish the richest to be at the surface to encourage quick growth when the plants are turned out. The comparatively poorer soil at a greater depth gives just enough of a check to promote free blooming. Were the richest soil turned to the bottom, we would have more foliage than we wanted, and would be obliged to plant thinner and to disleaf considerably besides. To insure richness at the surface, what little we can give in the shape of leaf mould or well-rotted hotbed manure (mostly leaves with a little dung), we place on the surface. This, though no doubt the practice would be condemned by good agriculturists, we generally throw over the ridges and leave it there for a considerable time exposed. We no doubt lose manurial properties by the exposure, but we gain in sweetness and the killing of worms, &c., by the frost. We generally turn it in a few inches without levelling the ridges before it would be too much dried by spring winds. In such mellow surfaces most things succeed well when they are turned out, and one secret of a rich flower garden in summer, we believe to be free growth at first and more stunted growth afterwards. The deep stirring prevents much of a check, secures so far against dryness, whilst the comparative poverty of the deeper soil prevents over-luxuriance. Of course when great luxuriance, as in the case of fine-foliaged plants, is the object, the opposite course should be followed, as with Ricinus, Cannas, &c.

Went on as occasion permitted in looking after young plants, damping, giving air, putting a little fire on, especially during the day, and potting greenhouse and stove plants as detailed in previous weeks.

Ice and Snow.—Had we not some ice we would have been snow-rolling. It is just rather thin for that purpose, but still a good deal could have been obtained; and if a little more fall we will most likely take advantage of it. We presumed almost everybody knew how to do the work, but everybody does not; as not so long ago we saw some big men lifting the snow gingerly on shovels, after scraping it and throwing it into a cart—a very roundabout mode of proceeding. The snow will roll only when it is soft or fresh-fallen. Just stoop down, and make a good-sized ball as if you were to go snowballing on a large scale. Turn the ball over and over in the snow, and as it collects and gets large you may want a man or two to help you with the huge mound that adds to itself in bulk and solidity as it is rolled along. The size of the huge ball may be in proportion as to how you are to get it into the ice-house or ice-stack. In the former case it may be as large as may be turned on to a barrow, the barrow being laid down on one side. If to be taken by a cart, the larger the mound is the better, as then it can be cut into great lumps with a shovel. A heap is easiest made for a stack when you can roll the snow from all the surrounding ground. If to be carted it is of less moment where you bring it from. If the snow is fresh and soft a little water will help to solidify it when knocked firmly together. In the case of a stack cut of doors, watering the

outside before a frosty night will be a good preservative before covering.

It is now very many years since we listened, delighted and instructed, to some of Mr. Keane's literary and scientific essays at the West London Gardeners' Association for Mutual Improvement. We wish he would write just such an essay on the principles of ice-preserving as he would have done then, with just the view before him of such a number of upturned faces, with ears taking in every word, and reasoning and criticising going on quietly until he had uttered the last word. The temperature of the ice is to us far from a settled question. The boiling water used for each foot of ice, see page 29, must raise its temperature. Suppose that ice must absorb some 140° to become fluid, is it not feasible to suppose that the boiling water would help to promote that fluidity? There is a little doubt about the whole question, so much so that we have for years done little or nothing in an artificial way to the ice. There might be a difficulty, too, in getting the boiling water, and it would be easy to err as to the proper quantity. Would our friend give us more insight into this matter?—R. F.

COTTON.—In these days of cotton famine, as there are many persons who have hothouses who would like to rear plants for the sake of curiosity, I may state that I have some samples of Sea Island and New Orleans Cotton seed by me, and sometimes I have quite a number of sorts, which I test for the Cotton Supply Association of Manchester. I shall be happy to send a few to any one on receipt of a stamped and directed envelope.—JOHN HAGUE, 36, Mount Street, Ashton-under-Lyne.

TRADE CATALOGUE RECEIVED.

W. Cutbush & Son, Highgate, London.—*Catalogue of Select Vegetable, Flower, and Farm Seeds.*

C. E. Brydges, St. James's Square, Cheltenham.—*Spring Catalogue of Kitchen Garden, Farm, and Flower Seeds.*

B. H. Poynter, County Seed Establishment, Taunton.—*Retail List of English and Foreign Seeds.*

COVENT GARDEN MARKET.—JANUARY 14.

The supply, both of out and in-door produce, is, for the season, well kept up. Grapes are unusually plentiful; Pines just sufficient to meet the demand; good dessert Pears very scarce; Oranges and Lemons good and abundant. Forced vegetables consist of the same articles as last week, and the Lettuce from the continent is tender and good. Unless very severe weather occur, there seems little likelihood of there being much change in quotations for some weeks.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples.....½ sieve	1	0	10	2	6	Wolons.....each	2	6	4	0
Apricots.....doz.	0	0	0	0	0	Mulberries.....punnets	0	0	0	0
Cherries.....lb.	0	0	0	0	0	Nectarines.....doz.	0	0	0	0
Chestnuts.....bush.	14	0	20	0	0	Oranges.....100	5	0	10	0
Currants, Red.....½ sieve	0	0	0	0	0	Peaches.....doz.	0	0	0	0
Black.....do.	0	0	0	0	0	Pears (kitchen).....bush.	5	0	10	0
Figs.....doz.	0	0	0	0	0	dessert.....doz.	3	0	6	0
Filberts.....100 lbs.	40	0	60	0	0	Pine Apples.....lb.	6	0	9	0
Cobs.....do.	70	0	80	0	0	Piums.....½ sieve	0	0	0	0
Gooseberries.....½ sieve	0	0	0	0	0	Pine-granates.....each	0	6	1	0
Grapes, Hamburghs lb.	3	0	8	0	0	Quinces.....½ sieve	0	0	0	0
Muscats.....do.	6	0	19	0	0	Raspberries.....lb.	0	0	0	0
Lemons.....100	5	0	10	0	0	Walnuts.....bush.	14	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.	
Artichokes.....each	0	0	10	0	0	Leeks.....bunch	0	2	0	0
Asparagus.....bundle	10	0	15	0	0	Lettuce.....score	2	0	4	0
Beans Broad.....½ sieve	0	0	0	0	0	Mushrooms.....pottle	1	6	2	6
Kidney.....100	2	6	5	0	0	Must. & Cress, punnet	0	2	0	0
Beet, Red.....doz.	1	0	3	0	0	Onions.....bushel	4	0	5	0
Broccoli.....bundle	1	0	2	0	0	pickling.....quart	0	6	0	0
Brussels Sprouts ½ sieve	2	6	2	6	0	Parsley.....doz. bunches	4	0	6	0
Cabbage.....doz.	1	6	3	0	0	Parsnips.....doz.	0	9	1	0
Capecans.....100	0	0	0	0	0	Peas.....quart	0	0	0	0
Carrots.....bunch	0	5	0	0	0	Potatoes.....bushel	2	6	4	0
Cauliflower.....doz.	2	0	2	0	0	Radishes doz. bunches	0	9	1	0
Celery.....bundle	1	6	3	0	0	Rhubarb.....bushel	0	9	1	6
Cumbers.....each	1	6	3	0	0	Savoy.....doz.	1	0	2	6
Endive.....score	2	6	3	0	0	Sea-kale.....basket	1	6	3	0
Fennel.....bunch	0	2	0	0	0	Spinach.....sieve	2	0	0	0
Garlic and Shallots, lb.	0	8	0	0	0	Tomatoes.....½ sieve	0	0	0	0
Herbs.....bunch	0	2	0	0	0	Turkeys.....bunch	0	3	0	6
Horseradish.....bundle	2	6	4	0	0	Vegetable Marrows doz.	0	0	0	0

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

CUCUMBERS FOR EXHIBITION (W. Brown).—There are no varieties superior to those you mention.

GARDEN POTS (A Constant Subscriber).—For the smaller sizes the price is about 2s. a cast; very large pots are dearer.

FLOWERS REQUIRED.—Can any of your readers tell me where to procure some healthy plants of the double blush, double flesh, and double copper-coloured varieties of *Primula acutis*, or the double white *Hepatica*?—Rev. H. H. C., Rectory, Drayton Banchory, Tring. [Any one able to supply our correspondent should direct to him. We cannot insert answers.]

WULFENIA (J. G.).—"What is the plant mentioned in the following extract from Gilbert and Churchill's 'The Dolomite Mountains'?"—"Churchill gave an account of his hunting among the mountains for Wulfenia, a rare and graceful plant, something like a Foxglove, about 18 inches high, provided with a rosette of large scalloped leaves, of a Lettuce-like form, and a stem all but bare of leaves, crowned with a spike of deep purple-blue flowers. It grows here in vast masses, on the mountain side, 6000 feet above the level of the sea, and when sunlight falls upon its glowing that is visible at a great distance." It is *Wulfenia carinthiaca*. There is a drawing of it in Jacquin's "Icones Plantarum Rariorum." Willdenow says it is found in rich soil on the highest of the Carinthian Alps. Flowers in July. Root creeping and perennial. Leaves in a tuft, all radical, obovate, 4 inches long, smooth, shining, and crestate. Flowers large, handsome, in a dense cluster, on a slightly scaly stem.

GLAZING WITHOUT PUTTY—REMOVING OLD PUTTY—VENTILATING AN ORCHARD-HOUSE (Life and Learn).—We have no experience in glazing without putty. Perhaps some of our correspondents will favour us with the most approved method of doing this, and also whether it will stand wind and wet. Old putty may be softened by applying to it rags dipped in a saturated solution of caustic potash, leaving them on for twelve hours, or by rubbing a hot iron along the putty. In ventilating a wall covered with glass we prefer having the ventilators horizontally along the back throughout the entire length, and this especially when there are Vines or Peaches on the back wall. In addition to this it is as well to have ventilating openings in front, immediately below the roof. We like these better than vertical openings the full length of the rafter at 6 feet or any other distance apart, they being very well for moveable houses, but not desirable for fixed structures.

WEEDS ON GRAVEL WALK (A. B.).—If you spread salt on the walk in dry weather, so as to cover it about one-eighth of an inch thick, that will destroy most of the grass. This, repeated from time to time, as the weeds present themselves, is, we fear, your only effectual remedy, as you do not like the walk to be frequently broken up. Taking off 3 inches of the gravel, and placing a layer of gas lime an inch thick, relaying the gravel over it, and rolling firm, would most certainly prevent weeds growing for some time, but the smell, we think, would be unendurable.

CLIMBERS FOR VERANDAHS (An Old Subscriber).—We do not know of a hardy variegated climber except *Lonicera brachypoda aureo-reticulata*, a variety of the Sweet Jasmine (*Jasminum officinale folia aurea*), not yet sent; and a variety of Vine (*Vitis vinifera variegata*). Of evergreen climbers there are few suitable for the purpose. The following would answer:—*Ceanothus aureus* and its variety *pallidus*, *C. dentatus*, *rigidus*, and *foribundus*; *Berberis Darwinii*, *Cotoneaster Simmonsii* and *buxifolia*, *Arbutus procera* and *Menziesii*, *Eucalyptus glandulosa* and *macrantha*, *Garrya macrophylla* and *elliptica*, *Eugenia Ugni*, *Photinia serrulata*, *Ligustrum japonicum*, *Magnolia grandiflora*, the Exmouth variety, and *foribunda*; and *Crataegus pyracantha leucocarpa*, and *crenulata*. Unless yours is a warm locality the following, in addition to the two varieties of *Pyracantha*, though not evergreen climbers, are, nevertheless, fine flowering climbers, and would answer much better:—*Jasminum nudiflorum*, *Solanum jasminoides*, *Pasiflora corallia*, *Glycine sinensis* and its variety *alba*, *Foraythia suspensa*, *Jasminum chrysanthemum*, *officinale grandiflorum*; *Caprifolium Sheperdi*, *odoratissimum*, *sempervirens*, *Brownii*, *Youngii*, and *foribundum*; *Bignonia radicans*, *Clematis lanuginosa*, *florida* var. *Nieboldii*, *aurea* and its variety *odorata*; *Shillingii*, and *venosa*; *Aristolochia sipho*, and *Eccremocarpus scaber*. *Mansueti* stocks are the stocks on which Roses are often budded, being rooted suckers or cuttings of the *Mansueti* Rose, a strong free-growing and rooting variety.

CHEILANTHES FRAGRANS OR OEOLA (Felix-mas).—This is very difficult to cultivate. It is from the south of Europe, and requires an airy yet moist greenhouse temperature. *Cheilanthes* generally like a moist but not stagnant atmosphere, and are very impatient of moisture on the fronds; syringing should, therefore, be avoided. We found it did best in a well-drained pot, in a compost of pieces of sandstone, the size of a Walnut, one half and the other half turfy peat and loam in equal quantities, with a free admixture of silver sand. It was kept well watered at the root, and in a light but partially shaded greenhouse fernery, having a moist but airy atmosphere, and it grew fairly. A hot, close, or stagnant atmosphere, and very wet and dark situation, are most injurious to it.

PEARS FOR PYRAMIDS (Type).—*Doyenné d'Été*, *Baronne de Mello*, and *Urbaniste*, succeed in that form. The other two we never knew to be so trained.

BOTANICAL CLASSIFICATION (*G. Brown*).—We do not remember your query.

LAY MOULD, &c. (*A Subscriber*).—You may keep your leaf mould and loam in bags in your cellar without injury to anything but the bags. Tar-paulin is better than mats for covering pits, as it excludes wet, especially if you put a little hay or straw between the glass and tarpaulin.

DIRECTION (*M. A.*).—Mr. Thomson, Archerfield, Dram, N.B. We are not aware that the Vine you mention has been supplied to the trade.

FUCHSIA SEEDLING (*Sarniana*).—It is impossible to give an opinion of the merits of a seedling from a single flower and leaf. It seems a cross with corymbiflora. The other little scrap seems to be a *Crucianella*, but no judgment can be formed on such fragments.

SOUTH AUSTRALIAN PLANT (*Country Curate*).—We do not know it by the colonial name "Shirt's Desert Pea," but as its "flowers are scarlet, with a large black eye," we think it is, probably, *Cilanthus paniculatus*. Portraits of this are in the "Botanical Register," "Horticultural Society's Transactions," and Paxton's "Magazine of Botany."

CRICKETS IN CUCUMBER-HOUSE—POPLAR CUTTINGS (*A Weekly Reader*).—The most effectual remedy is to poison them by spreading phosphorus paste on thin slices of bread, the same as if buttering these thickly. This preparation placed in their haunts will kill many—certainly all that partake of it. It should be laid at night, as the directions on the cover will inform you. Now is a good time to insert Poplar cuttings, but the sooner it is done after the leaves fall the better. They should be taken from the strong growths of last year and be cut into lengths of from 8 to 12 inches, two-thirds of their length being inserted in the soil. The distance should be about 6 inches apart, and 12 or 15 in the rows. The moderately strong wood is the best.

INDIANRUBBER PLANT SHEDDING ITS LEAVES—PLANTS FOR HANGING BASKETS—THRIPS ON FERNS (*A Constant Reader*).—The leaves fall, we should think, through want of light, and the extreme dryness of the atmosphere in the drawing-room; for though this plant will endure almost any treatment, it cannot thrive in a dark and extremely dry atmosphere for a lengthened period. The plants for baskets outside a west window are few, and, though we name some, we do not vouch for their doing either well or flowering at the time named—*Vincas*, six sorts; *Lysimachia nummularia*; *Antirrhinum linariifolium*; *Campanula garganica*; *C. Barbellieri*; *Convolvulus mauritanicus*; *Linaria cymbalaria*, and its variety *alba*; *Saxifraga japonica*, and *S. sarmentosa*; *Sedum Sieboldi*; and the variegated-leaved *Strawberry* is very pretty; but nothing is handsomer than the variegated gold and silver, and the small green-leaved *Ivies*. If the Ferns in the fern-case are not much infested with thrips the latter may be removed with a damp sponge, to which they will adhere on its being drawn over them, care being taken not to injure the fronds. If very much infested the best plan would be to fill the case quite full of tobacco smoke, removing the case to an out-house for the operation. If fumigated the fronds of the Ferns should be dry. By removing the thrips with a damp sponge you may soon clear the case, but to prevent their attacks in future the atmosphere should be kept more moist.

BOOKS (*A Goose*).—"The Garden Manual" for twenty postage stamps, and "The Poultry-Book for the Many" for seven postage stamps, can be had free by post from our office, and will suit you.

NAMES OF FRUIT (*F. H.*).—1, Henriette; 2, Glou Morceau; 4 and 6, Napoléon; 5, Easter Beurré.

NAMES OF PLANTS (*E. H. N.*).—1 and 5, *Athyrium Filix-femina*; 2, *Asplenium microdon*.—A rare British variety of either *A. lanceolatum* or the *Adiantum nigrum*; yours is not advanced enough to say to which it belongs. 3 and 7, *Lastrea dilatata*; 4 may be *Asplenium lanceolatum* in a wretchedly starved state, but is more like a bad frond of *A. fontanum*; 6, *Polystichum aculeatum lobatum*, young; 8, *Lastrea æmula*; 9, *Asplenium Adiantum nigrum*. (*Allen Mallet*).—*Pteris aquilina*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY-KEEPING FROM A COMMERCIAL POINT OF VIEW.

(Continued from page 40.)

ARTIFICIAL HATCHING.

THERE is nothing absolutely new under the sun! Even hatching chickens by artificial means has been carried on in Egypt, China, and other eastern countries, from the remotest ages to the present day; and yet in England it has hitherto proved a failure in a commercial point of view. It is true that in Egypt, where they hatch many millions of poultry annually, artificial hatching is a trade of itself, carried on by hundreds of proprietors of ovens, and their success in hatching will be apparent when it is stated that they sell one hundred newly-hatched chickens for about 3s., or that they will return, free of charge, sixty chickens for every hundred eggs entrusted to them for hatching. It is also true, that the climate and soil of Egypt are more favourable than those of England to the rearing of poultry; but then, why should we not appeal to science to assist us in overcoming the drawbacks of our soil and climate? No doubt we shall never be able to produce poultry so cheap as in Egypt, where soil, climate, labour, and cost of land are eminently favourable to a cheap production; but in compensation we can obtain far higher and in proportion more remunerative prices for our poultry, their feathers, and

It is an acknowledged fact, that the artificial hatching of eggs in England although carried out on principles not in strict harmony with the natural incubation of a hen, has yet proved far more successful than the artificial rearing of chickens. This, of course, is solely to be ascribed to the improvident way in which chickens are treated before they have their natural protection, their feathers, in a climate where the sudden changes in the temperature of the atmosphere, and the almost continual humidity of the soil, act prejudicially on young animal life; but surely these are difficulties which can easily be overcome? Do we not obtain in England by artificial means such splendid tropical fruits as no tropical climate can produce? And why not surpass Egypt in rearing poultry, if not in cost at least in quality and scientific feeding and fattening, for which far more remunerative prices are obtained? Well, all this can now be accomplished in England by any person who will follow my plan of hatching, rearing, and fattening poultry by artificial means. This plan must necessarily be modified according to the importance of the breeding establishment and the number of eggs to be hatched daily—from one to a thousand—but the main principles essential to the successful artificial breeding of poultry will, under any circumstances, remain the same.

THE ARTIFICIAL HATCHING ROOM.

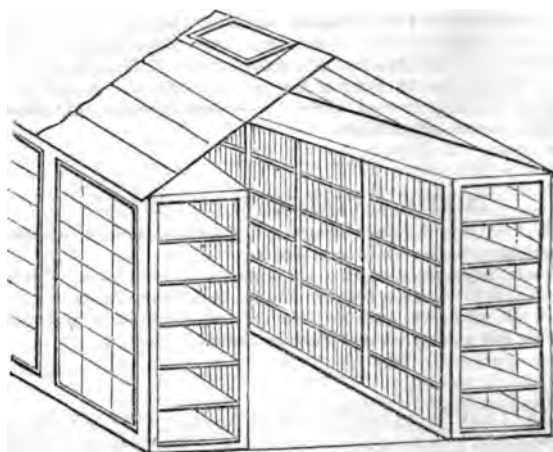


Fig. 17.—Artificial Hatching Room.

The floor of this room should be formed of concrete, the sides of moveable glazed frames, and the roof of boards covered with asphalted felt, slates, or zinc. The interior ought to be fitted along the sides with moveable shelves, which can be drawn out for cleaning. These shelves will be divided into separate compartments, 3 feet long, 2 feet wide, and 1 foot high, the sides and the front, which forms a door, should be made of galvanised iron wire. In each compartment ought to be a frame lined underneath with long fleece the same as in the portable artificial mother's. In these compartments the chickens are placed from their birth up to a week or ten days old, when they are put under the care of an artificial moveable mother (see fig. 15), in small establishments, or in the artificial rearing home in large establishments. These compartments ought to be covered with a felt carpet, which must, however, be kept well cleaned and occasionally dipped in boiling water. The best way to supply food and water to such young chickens is by means of two



Fig. 18.—Feeding and Drinking Saucers for Young Chickens.

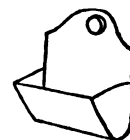


Fig. 19.—Feeding and Drinking Vessel for Young Chickens.

saucers (see fig. 18), one within the other, and between which the food or water is put. This will prevent them wetting themselves or scratching the food about. The hatching room will require no heating apparatus, as the

heat from the hatching apparatus, which is kept in the middle of this room, will keep the temperature sufficiently high during winter. Near the ridge of the roof ventilating-frames should be fixed, and near the floor one or two sliding doors should be provided to allow of the admission of cold air.

Chickens hatched in a dry atmosphere will never be so strong and healthy as those hatched in a moist heat, as is evident from the difference in the appearance of a brood hatched in a loft, and one hatched in the field; and as a moist temperature is highly desirable, it should be provided for in artificial hatching. The apparatus described below, although only calculated to hatch one egg per day, combines the same advantages as one capable of hatching one thousand eggs per day, and will answer for all the requirements of an amateur breeder. Besides it is so portable and convenient in its construction that it can be placed in a bed-room, and while hatching it will keep the room warm day and night, and the light from the gas or lamp will serve as a night light.

PORTABLE ARTIFICIAL HEN FOR HATCHING.

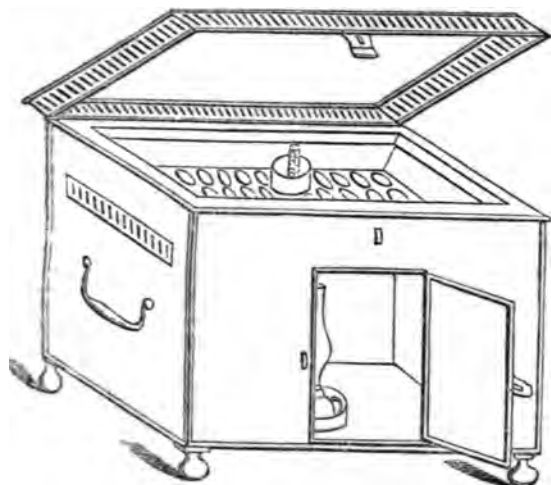


Fig. 20. - Portable Artificial Hen for Hatching. Perspective elevation.

From the above perspective elevation and section it will be seen that the hatching apparatus consists of separate parts. 1. A glass-covered box. 2. A water tank. 3. A floating vessel. 4. A gas or oil lamp.

The glass-covered box is made of japanned tin, it has a glass door through which the light can be seen. The bottom of this box is perforated in the centre for the admission of air to the lamp, and the other part is carpeted to receive the chickens as they leave their shells. About 12 inches from the bottom are four brackets to receive the water tank. The lid has a perforated border for the escape of the vitiated air and the steam from the water. The sides are provided with handles

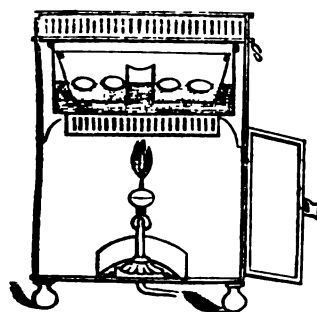


Fig. 21. - Transverse Section.

for carrying the box from one place to another, and it stands on four knobs to allow of a free passage of air underneath.

The water tank is made of tin, and a little smaller than the box so as to allow about half an inch for the free passage of air all round.

The floating vessel is also made of tin, and is a trifle smaller than the water tank, so as to allow of its floating in it. The centre of this vessel has an oval opening in which a registering thermometer is kept to show at all times the temperature of the water. The bottom of this vessel is covered with about an inch deep of silver sand on which the eggs are placed. By means of the central opening and that between the vessel and the tank, the air is kept in a con-

stantly moist condition. The lamp may burn either gas or oil, but gas is certainly preferable.

MANAGEMENT OF THE APPARATUS.

This is so simple that it can be entrusted to a child, and only a very few directions will be necessary.

1st. Fill the tank with hot water till the floating vessel reaches the top level, then see that the water has a temperature of nearly 112° . Then light the lamp. Should the heat increase reduce the flame, but if the temperature rises or decreases but slowly it can be regulated by admitting more or less air through the door of the box.

2nd. The principal point, however, is, that the temperature on the sand should not vary much from 105° , and it will be found that with a water-heat of 112° , the sand will be at 105° , and the eggs at 98° . For beginners it is always best to put the apparatus in action for a day or two before putting eggs in it.

3rd. Turn the eggs once or twice a-day, and keep the water replenished as it evaporates.—G. K. GEYELIN, Civil Engineer, London.

(To be continued.)

PROFITS OF POULTRY-KEEPING.

In the article "Poultry-keeping from a Commercial Point of View," your correspondent, Mr. G. K. Geyelin, makes a calculation of the extra revenue to be derived from 3000 hens, and arrives at a result of rather a startling nature. It is true, Mr. Geyelin allows nothing for deaths, &c.; but does he not make a serious mistake in calculating the value of the eggs at 15s. per 100? I am buying good fresh-laid eggs now at 1s. per dozen, or 8s. 4d. per 100, and, of course, the man from whom I buy them gets a good profit, as he has to buy them from the farmers' wives.

I fear that 5s. per 100 would be nearer the mark than 15s. and if so, that would reduce the revenue from £275 to £225. Still, even then there would be a good profit left, and it is astonishing that the cottagers of England do not attend more to egg-producing than they have done.—C. S. J.

[We consider you are quite right, and we have warned our readers against accepting Mr. Geyelin's profit and loss statements. Those published and others which we have from him for publication, are all far too much in favour of the poultry-keeper.—Eds.]

KENDAL AND NORTH-WESTERN COUNTIES POULTRY SHOW.

THE tenth annual Show was held on Thursday, Friday, and Saturday last, in the Commercial Assembly Room, Highgate, Kendal.

On account of the Committee not being able to secure the commodious room that has been at their disposal for the past two years, and there not being another room sufficiently large in the town, they were obliged to strike out a number of classes which otherwise would have appeared on their list.

The chief feature in the Show was the Game classes, and the principal attraction amongst the Game was the class for local exhibitors, thirty-three pens competing for the honour of being the best pen in the county. The silver cup and second prize were won by Mr. Thos. Robinson, of Ulverston, and the third and extra first prizes by Mr. Woof, of Old Hutton; an extra prize, in the same class, was taken by Mr. Thompson, of Old Hutton. As a class, this was, perhaps, the best in the Show, not a single bad bird of any sort being seen in any pen. In the Single Game cock and cockerel class the competition was very close. For the cup it was a severe struggle between the best two pens, and it was only after a long comparison that the Judge decided in favour of Mr. Fletcher's splendid bird, though, in our opinion, the cock shown by Mr. M. Graham, of Kendal, was equally deserving.

There was a capital show of *Bantams*, and in the class for Game cock and two hens, no less than thirty-nine pens competed.

In the *Hamburgh* classes the different varieties were well represented; the magnificent birds of Sir St. George Gore being conspicuous in each class, though the head prize, a

silver cup, the gift of the Member for Kendal, was carried off by Miss Emily Beldon with a pen of Silver-spangled, the only pen she had in the Show.

In the *Dorking* class the Hopton Hall birds were more fortunate, the silver cup being awarded to them; though there was very little between them and the second prize birds shown by Mr. Knowles.

The *Cochin-China* classes were well represented, considering there was not much inducement, there being no cup given in this class. In the coloured birds Mr. Zurhorst took first in adults, and Mr. Stretch in chickens. In Whites, the Rev. Frank Taylor took first in adults, and second in chickens; and the Rev. E. Lucas was the winner of the first prize in chickens. The whole of this class were exceedingly good; the White *Cochins* especially, being far above the average. The Black *Spanish* mustered very badly, and those that were shown deserve no special remark.

Amongst the *Ducks* there were some excellent pens, some of the north-country birds treading close upon the prize pens of our most celebrated breeders. In the "Any Variety Class," were some remarkable birds, one pen disqualified for only having one Duck instead of two, contained the largest drake we ever remember seeing. The prizes, however, were given to the small fancy sorts.

On the whole the Show was a very successful one, it was exceedingly well managed, and was most respectably attended, the principal families in the neighbourhood taking great interest and bestowing their patronage in a very liberal way. On the last day the room was thronged the whole time, and in the evening was crowded to excess. All the Committee want to make this Show the first in the north is a suitable room, and we hope that next year they will be successful in securing the room that has in previous years been at their disposal.

The following is the list of awards:—

GAME (Whites and Piles).—First, T. West, St. Helens. Second, F. C. Ellison, Kendal. Third, Sir St. G. Gore, Bart., Hopton Hall, Derbyshire. Highly Commended, H. Thompson, Milnthorpe.

GAME (Black-breasted and other Reds).—First and Cup, T. Statter, Bury, Lancashire. Second, J. Fletcher, Stonecough, near Manchester. Third, W. Boyes, Beverley. Highly Commended, T. West, St. Helens; J. Fletcher, Stonecough. Commended, J. Gelderd, Kendal; M. Billing, jun., Birmingham.

GAME (Any other variety).—First, T. West, St. Helens. Second, H. Worrall, West Derby, Liverpool. Third, M. Billing, jun., Birmingham. Highly Commended, L. Cason, Ulverston. Commended, W. J. Cope, Barnsley.

GAME HENS (Any age or variety).—First, T. Robinson, Kendal. Second, J. S. Butler, Poulton-le-Fylde. Third, W. Boyes, Beverley. Highly Commended, T. West, St. Helens, Lancashire.

HAMBURGERS (Golden-pencilled).—First, Sir St. G. Gore, Bart., Hopton Hall, Derbyshire. Second, F. Pitts, jun., Newport, Isle of Wight. Third, A. Nuttall, Manchester. Highly Commended, J. Pearson, Wibsey, near Bradford; T. Wrigley, jun., Middleton; W. H. Dyon, Bradford; S. Smith, Halifax; R. Roy, Worcester.

HAMBURGERS (Silver-spangled).—First, N. Marlor, Denton, near Manchester. Second, Sir St. G. Gore. Third, C. Broadbent, Saddleworth. Highly Commended, D. Tait, Grasmere; Miss Irving, Penrith; J. Robinson, Garstang; W. Cooper, Helmsley, Yorkshire; M. Billing, jun., Erdington, Birmingham. Commended, T. Brooks, Keighley.

HAMBURGERS (Silver-pencilled).—First, Sir St. G. Gore, Bart. Second, J. Robinson, Vale House, Garstang. Third, D. Elleray, Bowness.

HAMBURGERS (Silver-spangled).—First and Cup, Miss E. Beldon, Gilstead, Bingley. Second, J. Robinson. Third, Sir St. G. Gore, Bart. Highly Commended, J. Altham, Acorington. Commended, G. E. Hardman, Rawten-stall (chickens); J. Fielding, Newchurch, near Manchester.

DORKINGS (Any variety).—First and Cup, Sir St. G. Gore. Second, H. Knowles, Liverpool. Third, D. Parsons, Cuerden, near Preston. Highly Commended, J. K. Fowler, Prebendal Farm, Aylesbury; J. Robinson, Vale House, Garstang; J. Gunson, Whitehaven. Commended, W. W. Rutledge, Kendal; T. Roger, Lancashire. **CHICKENS.**—First, J. K. Fowler. Second, A. Woods, Sefton, near Liverpool. Third, J. Robinson. Highly Commended, R. D. Holt, Windermere; W. W. Rutledge, Kendal. Commended, F. R. Pease, Southend, Darlington.

COCHIN-CHINA (Cinnamon and Buff, or Brown and Partridge-feathered).—First, F. W. Zurhorst, Donnybrook, Dublin. Second and Third, Miss E. A. Aglionby, Grasmere (Buff). **CHICKENS.**—First, T. Stretch, Ormakirk. Second, W. Newsome, Bingley. Third, Miss E. A. Aglionby. Commended, J. Withinshaw, jun., Nantwich.

COCHIN-CHINA (White).—First, Rev. F. Taylor, Kirkby, Lonsdale. Second, F. W. Zurhorst, Donnybrook, Dublin. Highly Commended, W. Dawson, Hopton, Mirfield, Yorkshire. **CHICKENS.**—First, Rev. E. H. Lucas, the Rectory, Edith Weston, Stamford. Second, Rev. F. Taylor, Kirkby, Lonsdale. Third, J. Hodgson, Whittington, Burton. Highly Commended, G. Lamb; J. Hodgson; Rev. F. Taylor. Commended, Rev. F. Taylor.

SPANISH (Black).—Prize, W. Harvey, Sheffield. **CHICKENS.**—First, W. Newsome, Bingley. Second, S. Robson. Third, A. Heath, Calne, Wiltshire. Highly Commended, A. Heath.

ANY NEW OR DISTINCT VARIETY NOT PREVIOUSLY MENTIONED.—First, T. W. Brierley, Middleton, Manchester (Poland). Second, T. Brooks, Keighley (White-crested Black Poland). Third, K. W. Boyle, Rosemount, Dundrum, Co. Dublin (Brahma). Highly Commended, H. Lacy, Hadden Bridge (Dark-pencilled Brahma Pouter); J. Bramwell, Moorhead, Acorington (Brahma Pouter); S. Butterfield, Kestley (Black Hamburg).

SINGLE COCKS.

GAME.—First and Cup, J. Fletcher, Stonecough, near Manchester. Second, M. Graham, Kendal. Third, C. W. Brierley, Middleton, Manchester. Fourth, W. J. Cope, Barnsley. Highly Commended, J. Hodgson, Whittington, Burton; T. West, St. Helens; M. Billing, jun., Erdington, near Birmingham. **COCKERELS.**—First, M. Billing, jun. Second, T. Statter, Bury, Lancashire. Third, T. West. Fourth, G. Robinson, Kendal. Highly Commended, F. King, Wellington, Salop. Commended, H. Thompson, Milnthorpe.

DORKING.—First, W. W. Rutledge, Kendal. Second, R. D. Holt, Windermere. Highly Commended, F. R. Pease, Southend, Darlington; J. Robinson, Vale House, Garstang.

SPANISH.—First, F. Crook, Forest Hill (Chicken). Second, J. Cragg, Kendal.

BANTAM (Game).—First, J. Munn, Newchurch, Manchester. Second, R. Dodge, Sheffield. Third, G. Smith, Staveley. Highly Commended, J. Munn; R. Dodge; J. Crossland, jun., Wakefield.

PANTAM (Game).—Cup, First, and Fourth, J. Munn, Newchurch, Manchester. Second, G. Smith, Staveley. Third, G. Maples, jun., Wavertree, near Liverpool. Highly Commended, Miss E. A. Aglionby, the Hollies, Grasmere (Piles); W. B. Mapplebeck, jun., Woodfield, Mosely, Birmingham; J. W. Morris, Rochdale; Sir St. G. Gore, Bart.; Hon. T. Fitzwilliam, Rotherham. Commended, M. Leno, jun., Birmingham; E. G. Hornby, Westmorland; D. Parsons, Preston.

BANTAMS (Any other variety).—First, W. B. Mapplebeck, jun., Birmingham. Second, M. Leno, jun., Bedfordshire. Third, W. Harvey, Sheffield (Booted White Bantams). Highly Commended, M. Leno, jun.; F. R. Pease, Southend, Darlington; W. J. Cope, Barnsley.

DUCKS (White Aylesbury).—First and Third, J. K. Fowler, Aylesbury. Second, Mrs. M. Atkinson, Kendal. Highly Commended, F. M. Hindle, Haslingden; J. Robinson, Garstang.

DUCKS (Rouen).—First and Cup, A. Woods, Sefton, Liverpool. Second, T. Nelson, Milnthorpe. Third, R. W. Boyle, Rosemount, Dundrum. Highly Commended, T. Hall, Haslingden; T. Robinson, Ulverston; Sir St. G. Gore, Bart. Hopton Hall, Derbyshire. Commended, T. Statter, Bury, Lancashire; J. Redhead, Kendal.

DUCKS (Any other variety).—First, C. W. Brierley, Middleton, Manchester. Second, D. Parsons, Cuerden, Preston. Third, J. F. Fowler, Aylesbury (East Indian). Highly Commended, T. Hall, Haslingden (Wild); R. Dickenson, Bowness; F. W. Earle (Black East Indian); C. W. Wilson, Kendal (Muscovy); I. Atkinson, Burton.

SPECIAL CLASS.—Extra First and Third, R. Woolf, Old Hutton, Milnthorpe. Cup and Second, T. Robinson, Ulverston. Extra Second, H. Thompson, Milnthorpe. Highly Commended, M. Graham, Kendal; J. Gelderd, Collin Croft, Kendal; J. Hodgson, Whittington, Burton. Commended, J. Hodgson; E. G. Hornby, Westmorland; H. Thompson.

PIGEONS.

CARRIERS.—First and Second, H. Yardley, Birmingham. Commended, J. R. Robinson, Sunderland; J. W. Wooler, Darlington.

TUMBLERS (All-rounder).—First, F. Key, Beverley. Second, T. Kew, Burton.

TUMBLERS.—First, W. Towerson, Egrement, Cumberland. Second, T. Kew, Burton, Westmorland. Highly Commended, H. Yardley, Market Hall, Birmingham.

OWLS.—First and Commended, W. Towerson, Egrement. Second, H. Yardley.

POWERS AND CROPPERS.—Prize, T. Kew, Westmorland.

BARNS.—First, W. B. Van Haansbergen, Newcastle-on-Tyne. Second, R. Thompson, Kendal. Commended, H. Yardley, Birmingham.

FANTAILS.—First, W. B. Van Haansbergen, Newcastle-on-Tyne. Second, H. Yardley, Birmingham.

TURBINS.—First, R. Thompson. Second, H. Yardley. Commended, J. R. Robinson, Sunderland.

TRUMPETERS.—First, J. R. Robinson, Sunderland. Second, W. B. Van Haansbergen, Newcastle-on-Tyne. Commended, F. Key, Beverley, Yorkshire.

JACOBS.—First, E. E. M. Royas, Greenhill, Rochdale. Second, J. Thompson, Bingley.

ANY OTHER VARIETY.—First, W. B. Van Haansbergen, Newcastle-on-Tyne. Second, H. Yardley, Birmingham. Commended, E. E. Royas; F. Key (Nuns).

JUDGES.—Poultry: Mr. B. Teebay, Fulwood, Preston. Pigeons: Mr. Sergenson, Liverpool.

PERTH POULTRY SHOW.

THIS was held in the City Hall, Perth, on the 12th and 13th inst.

SPANISH.—First, Viscountess Holmesdale, Linton Park. Second, F. Bruce, Perth. Third, Brown & Cochrane, Perth. Highly Commended, Cochrane & Ross, Perth; Mrs. M. U. B. Cross, Monifeth; D. Stewart, Perth; J. Morrison, jun., Perth.

DORKING (Any colour).—First, Viscountess Holmesdale. Second, W. Cooper, Inchture. Third, J. Elsworth, Campsie Junction. Highly Commended, W. Cooper; J. Elsworth; J. Spalding, Leath; Viscountess Holmesdale; Brown & Cochrane.

COCHINS (Any colour).—First, Brown & Cochrane. Second and Third, Viscountess Holmesdale. Highly Commended, Brown & Cochrane. Commended, W. Cooper; T. Y. Craig, Gallowater.

BRAHMS (Any Colour).—First, Lord Kinnaird. Second, Mrs. H. Barclay. Third, W. Cooper. Highly Commended, Mrs. Cross. Commended, W. Cooper; Mrs. H. Barclay.

GAME (Any colour).—First, Mrs. Cross. Second, J. Anderson, Maitland. Third, J. Morrison, jun. Highly Commended, Mrs. Cross. Commended, W. Bonthron, jun., Kirksaidy; R. Carmichael.

HAMBURGERS (Pencilled).—First, Mrs. Cross. Second, Mrs. Brown, Abercromby. Third, Mrs. White, Perth. Highly Commended, C. Lockhart, Kirkcaldy; T. Panman; R. Couper, Pathhead.

HAMBURG (Spaniels).—First, Viscountess Holmesdale. Second, A. Copland, Kisture. Third, Mrs. Cross. Highly Commended, Mrs. Brown. Commended, W. Kiddle, Cowdenbeath; W. France.

BANTAMS (Any colour).—First, G. Spalding, Drumsturdie. Second, Mrs. Cross. Third and Highly Commended, J. Anderson. Commended, F. L. Roy, Nenthorpe.

ANY OTHER BREEDS.—First, Countess de Flahault (La Flèche). Second and Third, W. Cooper (La Flèche and Crève Cœur). Highly Commended, Countess de Flahault (Buff Poland); T. Ross (Scotch Grey).

GEESSE (Any colour).—First and Second, W. Cooper. Third, J. Laing.

DUCKS (Aylesbury).—First, J. Anderson. Second, Lord Kinaird.

DUCKS (Rouen).—First, Second, and Commended, Mrs. Cochrane, Lundie Mill.

SWEEPSTAKES.—Spanish Cocks.—First, Viscountess Holmesdale. Second, Brown & Cochrane. **Dorking Cocks.—**First, Viscountess Holmesdale. Second, J. Kinworth. **Game Cocks.—**First, Mrs. Cross. Second, J. Anderson.

BRAHMA POOTRAS.

THINKING that Burmah might not be the country intended by Mr. Tanner, as mentioned in our last Journal, we wrote for information, and this is Mr. Leworthy's reply:—

"Last night I went the distance of two miles to have an interview with Mr. Tanner, whose family are residing in India now, with the exception of himself and youngest daughter, who left when she was four years of age.

"Mr. Tanner resides at Pilton, near Barnstaple, and he said—'I have been a resident for twenty-one years at Chumar, situated near the River Ganges, about three hundred miles from Calcutta, in India. I left there fifteen years since. Two years before I left I purchased at a bazaar at Chumar, some Brahmin Murge (fowls) at 2s. each, a very high price, but they were large fowls. At the same time common fowls in the market were worth 6d. each.' He said, also, that they did not derive their name from the river Brahma Pootra, but 'Brahmin,' means in India the highest caste of the people, and those birds being beyond the common order of fowls, the Indians called them Brahmin Murges. (In English, High Caste fowls.)

"Mr. Tanner was of a decided opinion that the Brahma fowls that I had, and which attracted his attention in my poultry-yard, were a pure breed of Brahmin fowls, and of precisely the same breed as those he kept in India.

"Mr. Falconer, resident at Newport, Barnstaple, told me about one year since, that about thirty miles below Chittagong, by the river Brahma Pootra, there is a very high bank adjoining the river. On this bank are numerous cottages built, the women residing in which employ themselves by taking clothes for washing for the gentry in that neighbourhood, and those cottagers keep only this kind of fowls; and at Chittagong he could not get any refreshment except fowls or eggs. He compared eggs to the stones of a pavement, being so plentiful. He had read a description of the Brahma Pootra fowls, and it agreed with those which he had seen in the Brahma village.—H. LEWORTHY, Newport, Barnstaple."

POULTRY SHOW IN PARIS.

FIVE of the salons in the Palais de l'Industrie, the sides of which were covered a few months since with the productions of the artists of all nations, presented an extraordinary appearance on the 19th, 20th, and 21st inst. In place of history, battles, landscapes, and portraits were collected the inanimate bodies of fowls, Turkeys, Geese, and Ducks. The Exhibition was a great success: there were more than five hundred contributors, and between two and three hundred specimens of poultry of one kind and another. Nineteen departments were represented.

The arrangements were admirable; sloping tables were placed around, and double stands of the same kind in the centre of each room. These were covered with blue paper, upon which the poultry was laid out with ample space on all sides, the various lots each consisting of four specimens, being separated by fillets of wood painted red, so that every article exhibited could be seen perfectly. On the walls were neatly-painted devices, containing the names of the classes and localities of production, and hung about with laurel intermingled and enlivened by a few coloured ribbons. The first day was devoted to arrangement; the second, till one o'clock, to the decisions of the jury, after which the public was admitted at a charge of half a franc; and the third to exhibition and sale of the articles.

The jury was composed of Count Leopold le Hon, President, representative in the Corps Legislatif of the department of Ain, famous for its poultry; two inspectors-general of agriculture, four farmers, and four dealers in poultry. The sum of four thousand francs was devoted to prizes, besides medals in gold, silver, and bronze. The grand prize consisted of a large gold medal and a thousand francs. The awards were marked by means of oval cast iron tablets, painted blue, with the raised letters picked out in gold colour. The fowls were divided into five categories—birds of the races of La Bresse, of La Flèche, of Houdan, of Normanby, and miscellaneous. The first of these was by far the most numerous, as the poultry is the most esteemed. One gold, one silver, and a number of bronze medals and honourable mentions were awarded in each class, and the grand prix d'honneur was awarded to M. Gorgondet, of Treffort, in the department of the Aix, for four pullets of the race of La Bresse. The other five classes consisted of Turkeys, Ducks, Geese, Pigeons, Guinea fowls, and other poultry. The department of Seine-et-Oise carried off the first and second prizes for Turkeys, that of Orne the gold medal for Geese, and Rouen the same for Ducks. The fowls of La Bresse were not so remarkable for size as for smallness of bone and plumpness; and the manner in which they are prepared for market is quite artistic. Some of the Geese were truly gigantic; but the Turkeys would not have borne comparison, perhaps, with those of Leadenhall Market. The sale was very brisk, and the names of almost every celebrated gastronomic establishment in Paris were to be seen on tickets in all directions. Forty and fifty francs were asked and easily obtained for prize Geese and Turkeys; and fowls that had obtained medals were marked in the morning after the Exhibition as high, if not higher, than thirty-six francs each. Poultry is an article of great importance in France, and the rearing of fowls in La Bresse, Burgundy, is one of the staple occupations of the locality; but it is not carried on in large establishments, experience proving that the collection of large numbers of poultry in one place invariably gives rise to epidemics amongst them. The Bresse race is not, however, so pure as some others, the delicacy of the meat and rapidity of the fattening being supposed to depend principally on soil and the mode of feeding. The Bresse pullets can be fattened at the age of three months, while those of other localities cannot be got ready for market till after the fifth or sixth month. The modes of rearing poultry differ in different localities. At La Bresse a pullet of three months is worth about two francs, and the fattening occupies them from fifteen to thirty days. To produce what is called a fat pullet takes about five gallons of meal, made from maize and black wheat. This is mixed with curdled milk, and given to the poultry in balls; the greater part are, however, only half fattened. A fine fat pullet sells for six to ten francs; an ordinary one for three to five francs, at the local market of Bourg. The poultry of the Flèche race is fed in the department of the Sarthe, on barley and black wheat meal mixed in the same way with milk. Four young cocks, for which a prize was given, averaged 11 lbs., (English) each, and were valued at 20s. to 24s. each.—(*Journal of Society of Arts.*)

SEX OF EGGS.

As the sitting season has again arrived, one becomes reminded how desirable it would be to be able to have cockerels or pullets from this or that hen, and also of the utter uncertainty which seems to hide the future sex of the egg.

The idea has been mentioned that the position of the air-vessel affords an indication; and also that the shape of the egg, whether round or oblong, is an indication, but these notions have been proved deceptive. I heard that eggs that were wrinkled at the small end would produce cockerels, and eggs that were smooth would produce pullets. Wanting some pullets two years ago, I set the smoothest-ended eggs I could get, reared ten chickens from the brood, and they turned out to be nine cockerels and a pullet, or just the reverse of what I had been led to expect.

Recently, light from another quarter has been thrown on this subject; and it is now stated that, of a batch of eggs of

one laying, those first laid will produce a majority of pullets, and those last laid a majority of cockerels. It would certainly be very desirable to be able to regulate this matter to some extent, and I hope this new idea will be carefully tried by enough of your readers to ascertain if there is any truth in it.—F. H.

THE COLOUR OF THE BILL OF THE AYLESBURY DUCK.

PERMIT me to ask, Why is it that the cream-coloured bill of the Aylesbury Duck is held to be an indispensable qualification at all our poultry shows? Judging by my own experience, I must confess my entire disbelief in that being the natural colour, because, if natural, the mere change of locality could not affect it. Now, it so happens, I have repeatedly claimed at various shows a prize pen of Mrs. Seamons, containing Ducks with bills of the orthodox colour, of course, and although I have tried all manner of means to preserve their delicate pristine shade, yet with all my care I have invariably failed. Two or three months sufficed to change the former sickly paleness into the healthy orange bloom to such an extent, as totally to unfit them for competing against Mrs. Seamons or Mr. Fowler. I have not the least doubt if my birds had been returned to Aylesbury, a brief sojourn there would have effectually blanched the bill to its prize-taking shade. This being not only my experience, but that of a great many other lovers of these beautiful birds, is it not natural for us to suppose that there is something in the character of the soil in which Ducks are constantly boring for food, to account for this? The soil of the Aylesbury vale, I understand, is a compound of clay, sand, and chalk—a mixture quite sufficient in my opinion, to produce by constant working in it, as Ducks do, the peculiar colour of the Aylesbury's bill. If in this respect my supposition is correct, it must be pronounced an injustice to exhibitors living in less favoured localities, for poultry committees, more especially the Birmingham Committee, to persist in maintaining the cream-coloured bill as a "*sine quâ non*."

There is another consideration in connection with this question to which as food-producers and food-consumers it behoves us all to give our serious attention. I allude to that of weight. While the Rouens, with their unfettered and world-wide competition, are gradually but surely making their way upwards—bidding fair ere long to outstrip the celebrated exploit of Mrs. Seamons' 27 lbs. pair of Aylesburies at Birmingham, the Aylesburies appear to have reached the goal of their ambition, and are resting complacently on the laurels they have won, contented if only one pen should save the honour of the class at Birmingham, while all the rest, from the second-prize downwards, were left in the unenviable position of vanquished rivals. Now, by renouncing the cream-coloured bill as the only standard, the consequence would be to bring into action an amount of feeding-experience unknown before, and instead of 27 lbs. being the isolated maximum weight at Birmingham, it would be the minimum. The fine large frame of this species warrants me in making such an assertion, now that we see what has been accomplished in the Rouens. We cannot therefore but deprecate a rule which, instead of stimulating the competition of the community at large, unwittingly serves to confine that competition to a small section of it.

It also will not be out of place here to draw the attention of the Birmingham Committee as well as exhibitors to the following significant facts, which will show to the former that the proposed alteration will tend somewhat to the increase of their funds, and to the latter what they have to expect under a continuance of the present system.

Referring to the catalogues, I find the entries for Aylesburies average about nineteen only per year during the last four years, whereas the Rouens nearly treble them—the last year giving fifty-one entries, making a difference of nearly £12 in entry fees in favour of the latter, and why this surprising difference? Simply because the Rouens have no stringent, unattainable, stipulation attached, while the Aylesburies have, and as a consequence the latter class is able to attract any entries, but from those interested, and those uninitiated in the mystery. And when exhibitors are

in this class at Birmingham for the last four years have gone to Aylesbury, and learn also the reason, and that it is utterly useless attempting to compete with Aylesbury under existing conditions, I shall not be surprised to see this class gradually dwindle into insignificance.

Let me, therefore, in conclusion, suggest that as the colour of the Mallard's and Grey Call's bill has been adopted for imitation in the Rouens, the colour of the White Call's bill should not be entirely ignored in the Aylesbury, the orange being indisputably the natural colour. Not that I would wish to make even this an arbitrary standard; but to make it "a fair field and no favour," I would propose that the prizes should be awarded to the heaviest pen of birds, "with bills of any shade" between orange and cream colour, provided the colour of the bills of each bird in the pen uniformly matched, and were besides in every other point the nearest to faultless.

These few observations are dictated by no unkindly feeling, but purely from an honest desire to advance the common weal.—G. B. H.

RABBITS.

I HAVE tried several kinds—viz., Himalayas, Silver Greys, Lop-ears, and lastly a beautiful pair of Patagonians, which have just arrived from France—and out of the whole of this stock not one has died from the time they have been separated from the doe; but of course I have illness amongst my stock occasionally, but with a change of food they always recover.

Can any of your readers inform me the cause of a Himalayan doe sometimes having amongst the litter one young one which is born perfectly black, but at the age of about two months changes to the colour of a perfect Rabbit of its kind? I have one now which is just changing, and I see that all about the head turns white first. Both the does and young ones are fed on cabbage leaves, carrots, celery, &c., twice a-day, besides as much oats and bran as they wish, and whenever a doe appears thirsty she is allowed as much water as she will drink while it is held to her; and they are kept in very dry and warm hutches.—J. S. W. BLACKETT.

LIGURIANISING AN APIARY.

WILL Mr. Woodbury have the kindness to give me his opinion of the following project for multiplying my Ligurians in the most rapid manner possible? I want to combine two objects. First, to insure as far as I can the continued purity of the stock which I received last autumn from his apiary; and secondly, to displace as expeditiously as may be my old black bees by the new comers. I propose to obtain, next season, as many new stocks of Ligurians as there are bars furnished with brood-comb in the Italian hive. At the proper period—i.e., as soon as I perceive drones issuing from the hive—I purpose to furnish as many empty hives as I wish to have artificial swarms, each with its bar and appendage. The hives are then to be immediately placed on the site of the hives of black bees, just previously removed, choosing a fine warm day in mid-May for the purpose, and shifting the hives at an hour when the greater number of bees are engaged in foraging—say from eleven to twelve in the forenoon. I assume that drones will make their appearance in the Ligurian stock several days before they are seen in the common ones. By this means all the black bees then out of the hives will return to their former domiciles, but without drones. But I imagine that if I leave matters here, there will scarcely be a sufficient number of black bees in the all-but-empty hive to meet the emergencies of their new and altered condition. I want the hive to be forthwith replenished with comb, &c., that the new Ligurian queen may at once proceed to the business of her vocation. My next step will be to take a few more black bees from the removed hive. This I shall essay to accomplish thus:—I shall take each hive of black bees into a dark room, or rather a room lighted by only a pane of glass; by gently moving the hive, not rapping it as in driving, I shall, no doubt, get a considerable number of the workers, then in the morning, to go to the light, where I can examine them, and

in case the queen should not have joined them, liberate them, when they will unquestionably wend their way to the hive prepared for their reception. Having done this I shall remove each hive of black bees, subjected to this rough and depopulating process, a mile or a mile and a half from my apiary. This will, I hope, if thoroughly carried out in my apiary, according to my present intentions, remove, or at all events very much diminish, the probability of the young Ligurian queens becoming impregnated with any but Ligurian drones. I am fully aware that in this way I shall increase the chance of having, in some few instances, perhaps, only drone eggs laid in some of the hives; but even taking this into account, are there any other means so simple and at the same time so efficacious for accomplishing my purpose of getting immediately an apiary replenished with the pure Ligurian stock? I once tried an analogous experiment in a partially-lighted room, although not for the purpose of raising artificial swarms, and it answered admirably. It will, of course, be understood that my project embraces the entire removal, to as great a distance as possible of all my stocks of black bees.—W. L.

[It requires, in my opinion, two seasons to ligurianise an apiary. The first should be devoted to furnishing all your stock with Italian queens, paying but little heed to their impregnation, since no matter how that takes place, all will breed pure Ligurian drones next year,* when all that do not breed true Italian workers should be weeded out and replaced by young queens, which, amid the multitude of Ligurian drones which will then exist, will have every chance of true impregnation. Thus much by way of preface. I will now consider the details of the plan submitted to me.

When you take out a brood-comb to make an artificial swarm in the way you propose, you should select one which contains brood in every stage from the egg to the sealed nymph, and should also take all the bees that are in it at the time, otherwise the attempt may fail from the lack of young bees which constitute the class of nurse-bees described by Huber. If the vacancy in the Italian stock can be at once supplied by a comb of black worker brood, the abstraction of bees will scarcely be missed, and may be repeated almost *ad infinitum* about every other day; but every comb of black brood should be marked with the day of the month on which it is inserted, and not employed for rearing Ligurian queens until say twelve days afterwards. If combs of black worker brood are unattainable, the place of those extracted should be occupied by empty worker-comb, which will be rapidly filled with eggs; but if no worker-comb be attainable, the remaining combs must be brought together, and the vacancy left on one side. In order to avoid the possibility of risk to the Italian queen, do not be content with not being able to find her on the comb about to be removed, but make sure of her not being here by ascertaining her presence on another comb at the time.

Putting the new artificial swarm in the place of a strong stock in the way you describe will, together with the adorning bees, generally insure a sufficient population without the aid of after-manipulation, but it should be furnished with enough combs to obviate the necessity of comb-building for the first fortnight, since all combs built before a queen is hatched are pretty sure to be drone-combs.

Artificial swarms will frequently raise a great many royal cells. On the ninth or tenth day, all but two of these may be extracted and employed in the formation of other swarms, which will thereby gain a considerable advantage in point of time. They should be cut out with a triangular bit of comb attached (apex downwards) and inserted in a similarly-shaped hole cut in a brood-comb taken from either a common or a Ligurian colony; the latter of course being preferable as a *dernier resort* in the event of the failure of the inserted royal cells. In all these operations the greatest care is necessary to avoid bruising or chilling the royal embryos and for this reason they should be conducted as rapidly as possible in the middle of a warm day.

If in the spring you can manage to transfer two or three of your stocks of common bees into frame hives, it will be a great assistance, and will, I think, go far to render the task of ligurianising your apiary as easy as it is interesting.

* *Vide my papers on parthenogenesis in Nos. 25 and 30 of THE JOURNAL OF HORTICULTURE*, for the explanation of this curious fact.

Instructions for performing this operation were given in No. 75 of "our Journal."

Any further information will be most readily afforded by
—A DEVONSHIRE BEE-KEEPER.]

A NEW CHAPTER IN THE NATURAL HISTORY OF THE BEE.

BEE COMMOTIONS AND QUEEN ENCASEMENTS.

(Continued from page 42.)

LANGSTROTH has admitted that during one season he lost a great many young queens artificially reared; though he attributed the circumstance to his having sited his hives so closely together that the queens, on returning from their aerial excursions, unable to discriminate their own domiciles, went astray and perished. I quite admit that it is a matter of some importance to have hives sited a little apart from each other, and to have those which are uniform in shape somewhat distinguishable in colour or appearance; but the proximity and similarity of hives are not, as Langstroth states, the entire cause of such losses. An experimental apiary must always be conducted upon the principle of a full knowledge of circumstances and probable results. I never think of calculating upon invariable success in all cases of artificially-reared princesses, and certainly never feel much disappointed when some of them fail by reason of any of the contingencies to which I have hinted they are liable. In cases where queens are reared naturally, not from compulsion but from choice, I very seldom indeed find them go wrong.

Now, it may be asked, How is this? The answer is easy. When a queen is reared with the view of swarming, it is a crowning point in a long series of preparatory doings all tending to such a climax. Drones are reared just to suit the necessities of the case, and when the swarm leaves all the elements and conditions of success are left behind which Nature requires. Seldom indeed in such circumstances have I found a failure. Not so, however, in cases of an artificial character. Here the rearing of a queen is a new idea, so to speak, towards which the bees are not, it may be, entirely prepared. Some elements or conditions of success may be wanting. Even though a queen is reared, there may be such a scarcity of drones not only in the apiary, but more especially in the hive, which by necessitating the queen to continued flights for weeks, as I have seen her, may in the end lead to accident and death. Nay, my experience would lead me to go a step further on this subject when I say, and it is not a haphazard statement, that a want of drones in the young queen's own hive, though abundant elsewhere, is a condition too often detrimental in its results. This, in my opinion, renders impregnation sometimes tardy, if not uncertain, and is the cause of her frequently going astray altogether.

Just look through the glass of the unicomb on such occasions, and see the preparations for the youthful queen's departure. See her led, if I may so express myself, by an escort of her subjects to the very entrance of the hive, where she is literally beckoned away by the clearest signs. See, too, the drones, fully alive to the exigencies of the moment, precede and follow her. Ah! it is not in such circumstances as these that I fear a successful result; it is only when these natural elements are absent in the hive that I often dread the consequences. What will be thought of the fact that this very season out of fifteen young princesses I reared from the eggs of one queen, and placed at the head of so many hives, six disappeared in consequence of being exposed, as I believe, to the unfavourable conditions to which I have here referred?

But to return. After such experiences as above detailed, I set myself anew to the task of reconsidering the whole question in all its varied characteristics and aspects. I found that no uniform principle could be applied so as to account for all the commotions and encasements occurring in the apiary, originating as they evidently did from a dissimilarity of causes. The foreign element of stranger bees could not account for all of them, neither could it be said that age and debility as affecting the queen applied to many of them. The question then occurred to me, is it necessary to

assume *a priori* that these curious phenomena do originate from one and the same cause? I could not from collating the mass of materials regarding these in my possession come to such a conclusion, and therefore I have attempted to evolve such a theory upon the subject that while it in some measure satisfies my own mind, I yet submit with the greatest diffidence in the pages of this Journal, inasmuch as I find from extracts from the writings of Herr Rothe, Herr Wallbrecht, the celebrated Dzierzon, and other German authorities, that the subject is not unknown in that land of philosophical research of myths, mysteries, and metaphysics, but is viewed as one of the greatest enigmas in apiarian science. This I must reserve, however, for a subsequent communication.—J. LOWE.

(To be continued.)

REGICIDE AMONG BEES.

I HAVE just read with pleasure the contributions of our two scientific friends, the Devonshire and the Renfrewshire Bee-keepers. I can indeed indorse the statement of the former in reference to the regicide he refers to. I had one good stock which swarmed on the 7th of May, and on the 24th sent forth a large second swarm, just seventeen days after the first. After this last was hived and settled, I observed the old stock, and on the ground, near it, I found a cluster of bees shamefully treating a beautiful large queen. I was surprised with what tameness she took their insults. I liberated her, and fearing it might be the queen of the stock which had just issued, I put her on the alighting-board, and she walked in. Next morning I found her dead on the ground.

Some time after liberating the queen referred to, I again noticed the old stock, and was exceedingly annoyed at finding another queen barbarously treated by the bees. I had hardly patience with them; but, thinking she was a supernumerary, I released her also, and put her on the alighting-board of another stock which I knew to be queenless. She was so weak and feeble, and lame in the hind legs, from the bad treatment she had met with, that she could hardly walk in, and never did any good. I carefully observed the stock from which these queens had been so shamefully expelled. The bees never seemed contented—never worked—would run up and down the hive in a stream, apparently in agitation, as if searching for something. Some time afterwards I examined this stock, and was annoyed at finding neither eggs, larvae, nor queen in it. I then cut a nice piece of comb, full of brood in all stages, from another hive, and inserted it in this. In two days I observed a marked difference in the conduct of the bees, and found four or five royal cells in progress, three of which were ultimately sealed and opened in the usual way; but weeks afterwards, on again examining the hive, I found it queenless. I believed these rebels had destroyed these princesses, as they had attempted to do the former ones. I tried them with another bit of comb, but they refused to raise any more queens. In the autumn they fraternised with another stock, and began removing their stores, and continued to do so until the cold weather put an end to their mischief.

Will our kind friend, the "RENFREWSHIRE BEE-KEEPER," tell us the best way of securing the object mentioned in his addendum? It is, in my opinion, the great desideratum of bee-keeping. A full account from his pen would oblige us all.—EDWARD FAIRBROTHER.

RANCIDITY IN BUTTER.

I SEND a pound of butter, in the hope of receiving some information as to the cause, or a remedy for, the acrid, pungent taste which you will find to exist in it.

The butter is fresh, the dairy and utensils scrupulously clean and well-cared for; the cows are out during the day, and fed at night with bruised oats and hay.

We have observed this peculiar taste at different times during the last five years—generally strongest in autumn; but last spring it was peculiarly strong. After two or three days the butter is unfit for any purpose, and salting only makes it worse.

Some hints are believed that it was caused by some herb

or grass; but there is so little pasture now, and the cows so nearly dependant on artificial food (hay and bruised oats) that I cannot attribute it to the grass.—COCHIN.

[We never tasted butter more rancid than the specimen sent by our correspondent. We can only suggest that the cream is kept too long before it is churned. We shall be obliged by any information on the subject.]

OUR LETTER BOX.

COVENTRY SHOW (J. W. T.).—As this Show was in no way made public, and is now long past, it is needless to criticise what the committee considered not of sufficient importance to be made known.

BATH AND WEST OF ENGLAND SOCIETY'S POULTRY SHOW.—This will be at Hereford in the June of this year. The prizes are very liberal, and cups are given as additional rewards, as well as sweepstakes. Prize lists, &c., may be had of Mr. Pitman.

HATCHING TEMPERATURE (A. W. M.).—105° of Fahrenheit's thermometer is the heat for hatching hens' eggs. How is it possible for us to say whether eggs from a farm-yard will hatch, when we know nothing whatever about the yard or its management?

WHITEHAVEN AND WEST CUMBERLAND SHOW.—"Jas. Wood," not "Jas. Wood," won the first prize for Cochins-Chinas.

SPANISH HEN ROSE-COMBED (Tyro).—There can be no purity in Spanish where a rose-comb appears. If the peccant bird is akin to those that appear pure, we should be nervous about the produce.

PRODUCING BANTAMS (C. S. J.).—Having made up your mind what breed you wish to introduce into the Bantam classes, choose the smallest male you can find having the attributes of the breed most strongly developed; put him to a large Bantam hen approaching as nearly as possible to himself in shape and colour, and guileless of points that would disqualify the progeny in the father's class. If your space permit, and you are willing to take the trouble, reverse the above, take the smallest hen of the breed you wish to make, and the largest Bantam cock of proper colour, &c. The next year you will have to choose your smallest birds, but those most promising in points and character, and you must put them together. You will also put the original father with his daughters, and mother with her sons. This will give you such birds that by judicious selection for breeding you will have a breed. All such require re-pairing and strengthening now and then. There were three pens of beautiful Cochins Bantams at Birmingham.

COCK'S COMB TURNED BLACK (E. F. M.).—Cocks' combs turn black from being chilled, from sickness, and from poison. There has been no weather severe enough to cause the first. The second may arise from over-feeding or improper food. In the first case, the food often remains in the crop. Warm water should be poured down the throat frequently, and no more food given till the crop is empty. This should be followed by a dose of castor oil; then soft food should be frequently given in small quantities till the comb is red and the bird cheerful. In case of sickness, castor oil is still the best remedy, a tablespoonful is a dose. When the comb becomes quite black, it is sometimes necessary to resort to bleeding. A small incision should be made, or the tip of one point cut off, but in either case care must be taken not to disfigure the bird.

DORKING HEN WITH CHERKS SWOLLEN (K. R.).—Foment with warm water. Give a table-spoonful of castor oil, follow by two pills of camphor, and feed on bread and ale. Seven or eight Dorking hens and one or two cocks. As many Cochins and Brahmas as you like.

"F. C."—Next week.

ROUP (K.).—Sixty hens are a great number for two acres, more than the land will profitably carry if they are Dorkings, especially if the chickens have to be reared on the same ground. It is quite true that it becomes tainted, but we think not to the extent people fancy. There can be no doubt that fresh ground is very beneficial to chickens as regards growth and constitution. It is often the case that a piece of grass handy in situation can be hired for a small sum after the hay has been carried. This is good for chickens. They should not leave the hens till they are six weeks old in summer, and if earlier the hen may be kept under the rip till she lay again. Scatter the chickens over the ground as much as possible. Kill any very bad cases of roup. Feed well on bread and ale. Put lumps of camphor in all the drinking-vessels that are in use, and see that the houses are clean. Leave doors and windows open all day.

JARS FOR PRESERVING EGGS (An Amateur, Old Subscriber, and Others).—Mr. Geyelin's agent, Mr. J. Melville, 20, Gaskin Road, South Hackney, London, will undertake to supply the patent air-tight jars for preserving eggs, as the manufacturers will only sell to the trade. Prices must depend on the size of the jars. The carriage to Lancashire per rail is about 2s. per cwt. The artificial vermin nursery will be fully described hereafter.

COVERING FOR BEE-HIVES.—A gentleman from Wandsworth writing in these pages a few weeks since gave a description of a covering for bee-hives. My employer would esteem it a favour if I could be permitted to see these coverings, so that I may get some manufactured on the same principle.—THE GARDENER, Sidney Lodge, Wimbledon.

LONDON MARKETS.—JANUARY 16.

POULTRY.

Christmas and New Year's days are passed, our country senders have done holiday-keeping, and a moderate but regular supply has again begun in poultry. Pheasants are still far in excess of the demand. We have never in our experience seen so many in one season. The mild winter should make early poultry plentiful, and we hope we may look forward to a prosperous year for buyers and sellers.

	s. d.	s. d.		s. d.	s. d.
Large Fowls	3 6	4 0	Partridges	1 9	2 6
Smaller do.	2 6	3 0	Hares	2 0	2 6
Chickens	1 9	2 0	Rabbits	1 4	1 5
Geese	6 0	7 0	Wild do.	0 9	0 10
Pheasants	1 9	2 0	Pigeons	1 0	1 1

WEEKLY CALENDAR.

Day of Week.	Day of Week.	JANUARY 24—30, 1865.	Average Temperature near London.			Rain in last 48 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
Day of Week.	Day of Week.		Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
24	Tu	Hasel catkins appear.	44.3	32.6	38.5	18	52 af 7	33 af 4	1 5	43 1	27	12 28	24
25	W	PRINCESS ROYAL MARRIED, 1858.	44.6	32.4	38.5	20	51 7	35 4	53 5	48 2	28	12 42	25
26	Th	Winter Acacia flowers.	45.3	32.6	39.0	17	49 7	36 4	40 6	0 4	29	12 55	26
27	F	Stephen Switzer born, 1682.	44.2	30.8	38.1	17	48 7	38 4	18 7	18 5	●	13 7	27
28	S	Asardh died, 1859.	45.4	30.8	38.9	20	47 7	40 4	57 7	40 6	1	13 18	28
29	Sun	4 SUNDAY AFTER EPIPHANY.	45.7	32.0	38.8	17	45 7	42 4	22 8	3 8	2	13 29	29
30	M	W. Alton died, 1793.	44.4	32.4	38.4	19	44 7	44 4	50 8	24 9	3	13 39	30

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 44.3°, and its night temperature 31.9°. The greatest heat was 57° on the 29th, 1863; and the lowest cold, 8°, on the 31st, 1837. The greatest fall of rain was 0.94 inch.

THE MODERN PEACH-PRUNER.

THE LONG AND CLOSE SYSTEMS—PRUNING FOR THE OPEN AIR AND ORCHARD-HOUSE.

INTRODUCTORY REMARKS—No. 1.



It is probable that more books have been written on the subject of the cultivation of the Peach than on that of any other fruit. The Vine alone may claim a rivalry in this respect. In both cases this is not at all surprising. The culture of both is laborious and expensive, and the market value of the produce, when successfully grown, only adds to their popularity. We may, therefore, safely conclude that the subject of Peach culture possesses a general and undiminished interest. The recent introduction of glazed structures, tending considerably to augment the varieties cultivated, and thereby to add proportionately to the general knowledge of the habits and properties of the Peach, has given an immense impetus to its culture. By this means this noble fruit is brought within the reach of a class of growers who otherwise would never have been able to obtain it. In proportion to its dissemination is the demand for increased information as to the best method of growing it well and profitably. It is true that there is no lack of works treating of this subject. The only question is, Do they entirely satisfy the progress of the day?

Since many of them were written the varieties cultivated have multiplied immensely, many of these varieties being semi-tropical in their habits, and unsuited to the older modes of training. Many fine Peaches and a very large proportion of the Nectarines now known, it is impossible to fruit in the open air. No one at present can foretell what combinations may result in the future, nor how much influence glazed structures peculiarly adapted to the habits of the Peach may ultimately have on its general cultivation. One thing, however, is certain, and that is, that the modern method of training must eventually supersede the old system. Nay, more, the object of this treatise is mainly to attempt to show that the peculiar treatment required by trees under glass is well adapted for trees against walls in the open air. Certain very important modifications suggested by the climate of England being observed, the writer is quite confident, fortified by his own long experience and success as a Peach grower, that the new system which he proposes will be found practicable, and suitable to open air as well as to orchard-house training. It is with this idea that, in the present series of papers, it is proposed to give an outline of every system of Peach culture, ancient and

modern, reserving to the newest experience on the subject the more detailed portion.

There is no lack of materials to select from. On the contrary, the abundance of authorities is extremely embarrassing. A selection will, therefore, be placed before the reader, adapted to the wants of the subject.

In reading through the works of the older writers on the Peach it is impossible not to see how, while evidently well knowing their subject, they fail to make it intelligible to the beginner. In this was the cause of their failure. The instructions given presuppose an acquaintance with the subject, which knowledge was not really existing. In consequence, the rules laid down were best adapted for clever gardeners, and those only who were of a certain habit of thought. In those days there was little scope for the amateur. Trees were budded on stocks calculated to last the lifetime of the buyer; glass was expensive; many things now in common use were unknown. One single tree, chosen from half a dozen established sorts, was spread over a vast number of square feet of trellis. How was the amateur to experimentalise on such valuable stock by the light of the vague and general instructions which were then current? We all remember our fathers' gardens—those expensive walls—the grand old trees clothing them, "*tant bien que mal*,"—our youthful awe and veneration of the dogmatic and self-asserting artist who presided over them. How could we, fresh from Oxford, dare to suggest any deviation from the old routine? Aristotle knew very little about Peaches, and, probably, if they ever existed in his day, called them "Persian Apples." Pliny, that great observer, was far better acquainted with their taste, but how few was he able to choose from! So that the gardener, practical as he was supposed to be, had it all his own way; and truly, in the then state of Peach culture, it was the safest plan for our parents to adopt.

Remembering these things, let us take up some old writer on the Peach, and it will at once be evident how he writes only for the initiated, and how little these could understand such vague rules. Still, in justice to these writers, let us always bear in mind that they were well acquainted with their subject, and only erred in expressing their thoughts indistinctly. But their great want was woodcuts to illustrate their meaning. In this consisted the great advance made by modern writers. Every cultivator of the Peach now knows that all Peach shoots are not alike, and he knows it by means of these invaluable illustrations. The modern books on this subject, then, are chiefly remarkable for detail and consequent classification. The French excel in this branch; the national taste lies this way. From a subdivision of property, under a magnificent climate, and having a varied soil, each Frenchman aspires to become a possessor of the land, and it follows that he loves it, and makes the most of it. Whatever may be said about agriculture, this subdivision of property favours gardening. The French mind is essentially given to detail, and highly adapted to organise. These are valuable qualities when applied to horticulture. Their books on the subject are,

therefore, admirable and deserving every praise. Nor is this all that is done. Professors, of well-known names, give courses of sound instruction on the theory and practice of pruning. These invaluable schools are attended even by ladies. The writer has derived much benefit from them; when shall we see similar courses open in England? We have learned men, second to none, deserving, too, of more honours than the country has as yet given them. When shall we see diplomas of various degrees given only to such gardeners and amateurs as pass their examinations satisfactorily? We live in an age of progress, and of rapid transition. Time is very precious. Horticulture has made immense advances in every way but recently.

The aim, then, of these papers is to give assistance to the amateur, and present to the mind, at one glance, the various modes of Peach culture.

The latest system differs much from that first used, and the cause of this is, no doubt, owing to the introduction of orchard-houses. In these one system alone obtains—the close pruning of shoots. While, therefore, it is necessary to make great allowance for the exigencies of open-air culture, there is really no necessity for following, in the latter case, any other way. To adapt close summer stopping, joined to close winter pruning, to the open wall, would be to simplify the whole system of Peach culture. Could this be well shown to be practicable, it would save much valuable time; and as the effect of close pruning is to increase the number, both of leading branches and of bearing shoots, it is evident that by that pruning space is saved and produce increased. The ancient plan was essentially based on “long pruning,” and experience shows that this has serious defects. In avoiding this error, others have fallen into the unnecessary and unnatural plan of summer shortening and disbudding.

It is the conviction of the writer, based on long practice, that the system of long pruning is unsuited to the present day. It will be shown, in the proper place, where alone it should be applied. The other methods, which are derived from it, are made, by the additions necessary, tedious and complicated. On the other hand the new method is simple, natural, and highly successful. The reader will, however, at least have this advantage, that he will be able to judge for himself, and select that which he prefers.—T. COLLINGS BRÉHAUT, *Richmond House, Guernsey.*

DRAYTON MANOR,

THE SEAT OF SIR ROBERT PEEL, BART., M.P.

HAVING arrived by rail at Tamworth, the first object that attracted attention was Tamworth old castle, seated on the declivity of a hill, with the river Tame at the foot winding along through the valley. Drayton Manor is two miles from Tamworth. There are two entrances, the first is the more private, with a lodge on the right, then through a grove and over a bridge, with the water musically chafing its course over boulders and rocky ground. The other entrance, about a quarter of a mile on the Coleshill road, is the principal one, and has a neat stone-built lodge and iron gates.

The drive leads some distance through an avenue of Limes backed by large Holly trees and plantations, and through the open park, with the surrounding scenery well varied by clumps and belts of mixed forest trees, with distant views, three of them over the lakes, and of the mansion conspicuously seated on rising ground. Passing by the pleasure grounds and entering by the kitchen-garden gate, I directed my steps to a neat Gothic cottage, the residence of Mr. Ballingall, the head gardener.

I am happy to observe that where recent improvements have been made at various residences, the first object has been to erect a suitable dwelling for the head gardener. At Lady Holland's and at Oak Lodge, Kensington, at Coombe Abbey near Coventry, at Hanbury Hall near Droitwich, and at Arle Court, Cheltenham, very good garden houses have been erected. They are of the Elizabethan or old English style. The leading feature of this style applied to cottages is the dispensing with broken lines. The house is composed of different parts, projecting at right angles from each other, with also a projecting porch, and the outshot octagonal window commands views in three different directions. The gables

are enriched with pendants, and the doorways with ornamental dressings, and there are handsome octagonal chimney-stacks. All the forms which particularly mark the Elizabethan style may be wrought in the cheapest materials with comparatively little labour, a small portion of ornamental work tastefully disposed is capable of producing very considerable effect. The size of the cottages would lead one to suppose that there was no objection to the anti-Malthus principle, and that gardeners (I mean those that deserve the name), will not advertise “no incumbrance.” I recollect dining one day with a gardener and his wife, who were blessed with a fine rosy-faced chubby boy, and the conversation turned on the impropriety of some gardeners' advertisements. I shall never forget the offended dignity of the mother as she said, “Good heavens! to say that that child is ‘an incumbrance’ is an offence against God, and a disgrace to gardeners.” After a little reflection she concluded, “I suppose the men who advertise thus are only hewers of wood and drawers of water!”

The kitchen garden at Drayton Manor is divided into three compartments, in which are a range of vineries 180 feet long, in three divisions, the borders provided with bottom heat, troughs on the pipes, and cast-iron tables in front; a fruiting Pine-stove 60 feet long, the sorts are Queens, Smooth Cayenne, Enville, Prickly Cayenne, and Providence, and the compost sandy loam and charcoal; a Fig-pit 60 feet long, with Fig trees in pots, which had ripened the second crop in the season; a Peach-case 270 feet long, in three divisions, each division can be heated separately, and the trees looked in excellent health, with plenty of fruit-buds; also a Peach-house; a Cucumber-pit 42 feet long, the plants bearing in pots and in the beds—the large leaves denoted health and luxuriance, and the fruit was splendid. The principal sorts were Perfection, Telegraph, and Conqueror of the West. A plant-house was filled with specimens worthy of exhibition at the metropolitan shows. The following are the names of a few:—Chinese Azaleas, *Acacia grandis* and *A. Drummondii*, *Phenocoma prolifera*, *Eutaxia myrtifolia*, *Eriostemon buxifolium*, *Rhyncospermum jasminoides*, *Lapageria rosea*, *Lonicera aureo-reticulata*, *Aphelaxis macrantha purpurea* and *A. macrantha rosea*, *Pleroma elegans*, *Euonymus japonicus variegatus*, *E. radicans variegatus*, *Elæagnus japonica variegata*, and *Oxylobium arborescens*. Besides the above there were an Orange-house, and houses for stove plants, Orchids, and Ferns. In these were fine specimens of *Cyanophyllum magnificum*, *Alocasia metallica*, *Maranta vittata* and *regalis*, *Croton picta*, *C. angustifolia*, and *C. discolor*, *Draena terminalis picta*, *Allamanda Schottii*, *Stephanotis floribunda*, *Begonias* of fine foliage and flowering varieties. In the frame ground were Pine-pits, fruit-room, Mushroom-house, &c. Upwards of 3000 Strawberry plants in pots were in the best condition for forcing, the sorts were Black Prince, Keens' Seedling, British Queen, Oscar, and Sir Charles Napier. All the houses and pits in this extensive and well-kept establishment are heated by hot water.

Drayton Manor house is built in the Elizabethan style, having the usual appendages of turrets, towers, and terraces. The building is of smooth ashlar freestone, and was built about twenty-six years ago from designs furnished by the late Sir R. Smirke. The east front consists of a central hall; a turretted corridor tastefully covered with Ivy connects the building with the offices on the right; and the left wing consists of the picture gallery and conservatory, the latter a costly and beautiful octagon building, and certainly one of the most complete structures of its kind I have ever seen. It forms a kind of nave and transept, in the centre of which stands a beautiful marble fountain and basin 14 feet wide. Its curvilinear roofs and dome are supported by handsome iron columns, fluted, and painted green and white, and the capitals and bands are gold and green; festoons of the rich green drapery of the foliage, wreathed with flowers, entwined the pillars and hung gracefully from the roof. Among them I observed *Cobæa scandens*, magnificent *Acacias*, and *Passion-Flowers* of various sorts. The ends of the transepts are occupied by groups of plants, and aviaries containing rare and beautiful-plumaged birds. From the centre and other parts of the roof are suspended extremely ornamental and massive hanging baskets well filled with drooping and other flowering plants, and four beautiful coloured chandeliers are hung round the fountain. At each

end of the nave are two richly inlaid stone tables and four large mirrors that give variety and magnitude to these lovely scenes. It is also adorned with rockwork, the crevices of which are planted with Ferns, the water trickling down from the top to the marble aquarium, with silver and gold fish sporting in their element. At each side of the conservatory and near to the picture gallery are grouped some healthy Date and Fan Palms, a beautiful *Aralia Sieboldi*, and some *Caryotas*. On ball nights, when it is open from the picture gallery and illuminated with its seventy-two gas-burners, the effect can be better imagined than described.

The genial warmth, the delicious fragrance, the fine forms and varied colours of the noble plants, the voluptuous stillness that prevails in this enchanted spot, only interrupted by the soothing sound of the gently falling water or an occasional chirp from the feathered inmates, lull the fancy into pleasing day-dreams. We imagine ourselves in the blooming groves of Italy, while Nature, sunk in a death-like torpor, announces the severity of the winter through the windows of this magnificent conservatory.

The next scene is the flower garden. It is formed in a sunken panel, and is surrounded on the east, south, and west by a broad terrace promenade in grass. The north side is bounded by a handsome Gothic terrace wall, furnished with correspondingly massive vases. The terrace promenade just mentioned leads from the conservatory to the end of the western boundary of the flower garden, and has in the centre, along the whole distance, a handsomely-wrought arcade of iron and wire trellis-work. This arcade is 12 feet wide and 14 feet high, having at the east and west corners circular pavilion-like domes, 27 feet in height by 30 in diameter, of the same material as the arcade. The whole is covered with climbing Roses, Honeysuckles, Clematises, Ivies, Aristolochias, and Virginian Creepers. The above terrace promenade is about 30 feet broad, having on the outer boundary a low iron palisading masked by a closely-clipt Yew hedge, with a space of about 5 feet between the hedge and the arcade. From the grass promenade descends a gentle slope about 9 feet wide, a walk 12 feet wide is continued round the flower garden at the foot of this slope, and is bordered by parallel beds of various sizes. Similar beds run parallel with the centre walk which leads from the terrace. The interior part of the garden is divided into eight grass panels by a transverse walk, and again by minor paths, which about on two circular bays in the transverse path, which are equidistant from the central walk. There are circular beds in the bays, and the eight panels contain geometrical beds. A beautiful spherical sun-dial stands in the centre of the flower garden, a pair of marble figures at the top of the central walk, and vases near the angles of the grass panels. Under the terrace wall, which forms the north boundary of the flower garden, is a noble border 140 yards long by 16 feet wide, which was planted in summer with a ribbon of gay colours, which very effectively relieved the massive masonry of the terrace wall. Looking from the stone terrace steps when the beds and borders are covered with the various sorts of Geraniums, Verbenas, and other choice plants, judiciously arranged as regards colours under the discriminating eye of Mr. Ballingall, I can well imagine the gorgeous effect produced. A broad walk winds from the south-west corner of the flower garden through shrubberies and borders of American plants, standard Roses, &c., to a mound, the slopes of which are covered with hardy *Heathes*, then to a flight of massive steps leading into the arboretum or pleasure grounds.

On the west front of the mansion is a terrace 100 yards long and 16 yards wide, and on the north side is the Adelaide terrace 120 yards long by 50 wide. Along the inside of this terrace wall are planted Junipers and round-headed *Portugal Laurels*, and three massive clumps of *Rhododendrons* occupy the centre of the grass lawn on this terrace. A broad terrace walk 164 yards long leads from the door in the picture gallery westward to a kind of terrace court, with a circular stone basin 60 feet wide, having a massive stone eising or cornice; a fountain 20 feet high plays from the centre of the basin, and on a distant mound is placed a finely-sculptured *Venus*. From the centre of the court descends a noble flight of steps having square stone kerbs, pedestals of the same material, and marble vases; another

flight of steps ascends to the mound. From the west front you see a well-kept lawn, on which stands a beautiful marble basin and fountain, backed by *Portugal Laurels*, Cedars, &c. All the walks on the terraces are decorated with beautiful white marble vases.

Drayton Manor is profusely enriched with the most charming of all garden ornaments—the terraces with their statues, and vases, and fountains, and balustrades, and steps, all of which rich accompaniments, by carrying the eye from the interior ornaments of the chambers to the garden, so connect the whole as to make them a pleasurable part of it. The want of colour, so necessary to the cheerfulness of some, is, at those seasons when flowers cease to bloom, compensated for by the courting of sunshine and by the lights which are constantly falling and playing about these architectural ornaments.

From the north terrace are extensive views through the park, with dappled deer in the distance, and a fine sheet of water enlivened with swans, foreign geese, and ducks; altogether it reminded me of the following lines in Thomson's "Seasons":—

"Herds and flocks
Drive the dry spring, and, mute imploring, eye
The falling shower. Hastes! in short response:
The pliant people streak their wings with oil
To throw the luck moisture trickling off,
And wait the approaching sign, to strike at once
Into the general choir."

The park, with its lakes and the groups of trees, and the woods, with fine open glades winding out of sight, extends about a mile in that direction to the Great North Road.

The pleasure grounds and garden consist of about 50 acres, and are divided from the park by an iron palisading, inside of which is planted a Yew-hedge, which completely shuts out any view of the palisading from the pleasure ground.

The entrance from the park is ennobled by beautiful iron gates fixed on embossed stone pillars supporting handsome marble vases. The drive now sweeps through the pinetum, and thence into a circular opening near the front-hall entrance, gravelled and bordered by a round-stone kerb, from which rise several stone pedestals, bearing also handsome marble vases. On one side of this entrance on the close-shaven lawn stands a trophy of war—a Russian anchor and cable, brought from Sebastopol in 1855.

In the pinetum are many noble specimens of *Picea nobilis*, *grandis*, *Nordmanniana*, and *pinsapo*, also of *Pinus excelsa*, *cembra*, and several others, some beautiful *Cryptomerias*, and Golden Yews, the foliage of the last beautifully contrasting with the dark green of the Pines. Masses of shrubs, and various other trees, formed an undulating boundary to the north side of this portion of the grounds. What is called the American garden was planted in avenues some years ago by Mr. Barron with *Araucaria imbricata*, and *Pinus nobilis*, *P. excelsa*, Irish Yews, *Wellingtonias*, (one of them was 16 feet high, and well feathered to the ground,) and an undergrowth of *Rhododendrons* and other American trees and shrubs, with grass rides between.

A branch of the river Tame runs through the park and close to the pleasure grounds, and has been expanded into several large lake-like sheets of water, with cascades. The trees are not sparingly or indiscriminately scattered around the margin, but liberally in some places, for the sake of a contrasted mass of colour, or shade to relieve the brilliancy of the water, and with discrimination everywhere to mark the beauties and heighten the variety of the outline without destroying breadth of effect. It gives me much pleasure to bear testimony to the superior management and high keeping displayed by Mr. Ballingall in all, and even the most minute, parts of this first-rate and extensive establishment.

Lord Brougham's schoolmaster is abroad in every city and hamlet patronised by the noble of the land, and led on by the lights of the age. At the village of Fazeley I saw a placard announcing that the first lecture of the season was to be given at the new school-room, Fazeley, by George Skey, Esq., subject—"Things worth Knowing." N.B.—As all the expenses of the library and reading-room, over and above the subscriptions, are kindly defrayed by the Right Hon. Sir Robert Peel, the receipts for admission will be applied to the purchase of books.—W. KEANE.

HARDY FERNS:

HOW I COLLECTED AND CULTIVATED THEM.—No. 8.

It was in Cornwall that I first became acquainted with the *Asplenium lanceolatum* growing in its wild state. I had had plants sent to me from the Channel Islands, but I had not succeeded in making them grow out of doors; and even in a greenhouse they could not be said to be happy in cultivation. No one who had seen *lanceolatum* only in cultivation would know it for the beautiful Fern, so graceful in proportion and healthy in colouring, when growing in soil and under conditions suitable to it. In its wild state *lanceolatum* is very variable. In the old stone walls round Penzance it may be found in quantities, stunted in size, and with an ill-natured look, as if it had come into existence upon the barren wall contrary to its own inclination, and being compelled to submit, it would at least do it with as bad a grace as possible. Here and there, growing in peaty well-drained soil, I have found it with its fronds measuring more than a foot in length, perfect in form, and in colour a bright dark green. From the vast quantities of plants in the wall, and the less number away from it, it would seem that some quality in the lime of the masonry was necessary to its increase.

Growing side by side with *Asplenium marinum* on the rocks of St. Michael's Mount, I found a very interesting variety of *lanceolatum*. At first sight I took it to be a variety of *Adiantum nigrum*; but its form was lance-like, its stalk much greener, and its habit of growth crisper and stiffer. I have shown the specimen to a good authority on Ferns, and it was declared to be *Asplenium lanceolatum*, partaking largely of the nature of *marinum*. It has retained its peculiar character for three years, and flourishes in cultivation as I cannot make either *lanceolatum* or *marinum* do. It grew on a cliff intuited with *marinum*. I could not reach it myself, but I got one of the sailors who rowed us to the Mount to gather it for me, and he called it *marinum*; but this it could not be. In growth it presents a compact tuft of shining dark green fronds.

The walk from Penzance to St. Michael's Mount is chiefly interesting from the quantity of rare and curious plants that are to be found on the low sandy marsh, along the upper part of which the high road runs. But the way to approach St. Michael's Mount is by water when the tide is full. The old dwelling-place of the St. Aubyns, placed on the pinnacle of a bold rugged rock, stands out from the blue waters beneath, showing itself clear and distinct against the blue of the heavens above, like the fortress of some enchanted princess accessible to fairies alone. As you near the miniature island a few cottages are seen on its tiny shore, and you are landed on a flight of steps that leads to the Mount.

Penzance abounds in beautiful country walks. It has, too, its Hyde Park or Cascine, where the fishermen, miners, and citizens, with their wives and children, assemble every Sunday afternoon in holiday attire, pacing up and down on a raised walk by the seashore, exchanging kindly greetings with each other. I have never seen this custom in any other place in England: it gives to Penzance the appearance of a foreign town on a fête day.

In the country walks you will find every field, and thicket, and hedge abounding in strange and curious varieties of *Scolopendrium*. I found some with the ends tufted and fringed—some with the margins crimped, and the spore-cases diverging from a line running all round the outer edge of the frond. In cultivation this latter Fern has progressed into stiff narrow fronds most curiously crimped, and the upper end divided into several forked tongues. I found several *Scolopendriums* approaching to undulatum, but they have not altered as much as the more monstrous forms. I have a little theory about *Scolopendriums*, the truth of which I have tested till it might almost be called a fact. When I have found a Fern slightly fringed at the sides, and have planted it by the side of a true *marginatum*, the inferior Fern shortly acquires the habit of its neighbour, and gradually becomes transformed into the likeness of its peculiar growth.

The transformation of Ferns is exceedingly curious. I have for some time been watching a fine plant of *Asplenium* which is slowly becoming divided into two or three

forks at the end of the frond. The pinnae also are acquiring a toothed appearance, in some cases being cut almost up to the rachis, till it approaches very near to *A. fontanum*, although the difference is still too marked for any one to mistake the one for the other. This plant of viride is a near neighbour of a fringed and forked *Scolopendrium*, and not far from *A. Filix-mas cristata*. I believe all *Scolopendriums* are improved by cultivation and by good society; but this acquired beauty has never for me the same charm as natural grace. It is like the difference between a learned and a clever man—between water pumped up from a cistern, the length and breadth of which you can measure, and the never-ceasing flow of a rivulet on which the sunbeams sparkle and die. Still we do not grumble at a cistern when we do not possess a spring, and there is much pleasure in watching all the changes of the *Scolopendrium*. They have one other great point of recommendation—you may find something new in them, some strange deformity which no one else has noticed before; so that each hunt after Hart's-tongue has a sort of arctic-exploring character about it.

Asplenium marinum grows in large quantities round the shores of the "Lyonesse." At the Logan Rock, which must be "done" with the rest of Cornish sights, *marinum* is to be found in fine large clumps; but the many visitors who make pilgrimages to the huge plaything do not leave much available for ladies' reach. The Logan Rock is said to be between 60 and 70 tons in weight, and so finely poised that even a woman's strength can set it in motion. I saw it rocking to and fro as I was scrambling for Ferns in view of a fine expanse of ocean, breaking into gentle ripples on the white beach of the bay beneath.

A most interesting walk takes you from the Logan Rock to the ancient church of St. Buryan, where the eye can take in at a glance all the peculiar characteristics of Cornish scenery, and many of the antiquities which abound in the neighbourhood. In the churchyard of St. Buryan there are two well-preserved and very ancient crosses, on one of which is a rude representation of Christ on the cross. Within the church is a curious coffin-shaped monument, round the edge of which is an inscription in Norman French to "Clarice the wife of Geoffrey de Bolleit," ending with the promise of ten days' pardon for all who pray for the lady's soul. This monument is the more remarkable, as all vestiges of gentle residences have long since passed away, and only a few poor cottages remain to mark the site of what once was a place of note.

The view from the church is wild in the extreme. Standing on the summit of the old tower, the eye roams over tracts of barren land golden with Furze; huge upright stone pillars lie scattered here and there in the fields around—wondrous monuments of the past, when the dark belief of the Druids held sway in the land. Beneath is the emblem of the crucified Saviour, at whose coming the mists of unbelief faded away; in the distance, shining far round, is the wide expanse of the Atlantic Ocean, with the islands of Scilly made visible by the gleam of a setting sun.

On this one excursion you may find *Osmundas* at Lamorna Cove, *Lastrea recurva* by the hedge side, *Asplenium lanceolatum* in the walls, *marinum* on the rocks, and all the common Ferns everywhere. Besides the Ferns, the district abounds in rare wild flowers, such as are not often found in England.

One of the most pleasant excursions from Penzance is to Cape Cornwall. The carriage must be put up at the small mining town of St. Just, which is situated about a mile and a half from the Cape. The rock juts out from the sea, bold, erect, and defiant, able to cope with, and to hurl back again, the angry waves as they rave at its base.

I have never seen such glorious waves as at the Land's End and Cape Cornwall. They seem imbued with some living power of evil, urging them on in mad fury to destruction. To the west of Cape Cornwall there are two dangerous rocks, called The Brisons, rising abruptly from the sea upwards of 60 feet at high water. I have seen these nearly hidden by the foam and spray of the waves as they break roaring against them.

But Cape Cornwall is the best in a calm. Descending by a steep path out in the rock you enter upon a bay, into which the waters come lazily with a lapping lulling sound, curling round the boulders of rock, and swelling out the

beds of the streams which trickle from the heights. Gulls, with their soft white plumage, wheel in gentle flights above your head. The air is soft and balmy as in Italy; and if you will you may pass hour after hour in the delicious calm of perfect repose—repose unbroken even by a dream. But if you will, as I did, you may leave your companions and stroll on and on, peering into sea caves and old shafts of mines, till you light upon—not a gull or bird of any sort—but a lad, whose bright eyes shine with keen intelligence out of a copper-coloured face, and whose hands, face, and clothes are all of the same copper hue. A quick glance and a nod, and we are sworn friends. By-and-by we find a cave literally covered with *A. maritimum*, hanging in rich clusters from the roof and sides, wherever the waves do not reach—not common *maritimum*, but the true Cornish variety, with fronds measuring three-quarters of a yard in length, and the pinnae very narrow and very far apart. My young friend and I soon secured a basketful of beautiful specimens, conversing all the while on the people and things in the mining district. Wages were pretty good; but there was the old grievance of “tommy” shops and delayed payment, necessitating the running up of scores at the small shops, and the payment of large prices for inferior goods. In religion the miners were for the greater part Methodists, Bible Christians, &c., with a slight reaction in favour of instantaneous conversion, as produced by Mr. Aitken and his followers. I asked, “Was Mr. Aitken loved?” “Yes, indeed he was. There was no hour by day or night he was not ready to be at the service of the poor. He was good, and the Methodist parsons were good.” And so my friend patronised first one and then the other, and doubtless thought himself very good too. Thus conversing we came back to my companions, whom I left looking too sentimental for aught but lotus-eating, but whom I found devouring cake and sandwiches with the rapidity and destructiveness of locusts. The copper boy sat down on a rock and devoured too, giving to the picture a richer tone of colouring than even blue sky or white gulls could produce.

I never found the true Cornish variety of *maritimum* excepting at Cape Cornwall. In cultivation it loses much of its individual character. It diminishes in length and in the narrowness of the pinnae, but it still preserves a certain peculiarity of outline sufficient to separate it from the common *maritimum*.—FELIX-FORMINA.

CULTIVATION OF THE MELON.

(Continued from page 46.)

IN POTS.

This mode of culture is chiefly applicable where there are no frames, pits, or houses, for growing Melons, though these are produced with much greater certainty in such structures than in those which I am about to treat of. A person having a greenhouse may attempt growing a few Melons in addition to flowers. After greenhouses or pits are cleared of their occupants for the summer, there is often room which the owner does not know how to employ usefully; it may be that there is a fancy for fruit; there may be no Vines, or, if any exist, they are perhaps planted far apart, so that anything placed between them would obtain plenty of light. This is the house for Melons. It would not suit Figs; they would require to be in the house much earlier, and Peaches are the same; besides, such fruits take up room in winter, the Melons none, and they can be raised in the same bed as the Cucumbers. Directions for raising plants will be found in previous articles. Select a plant that has been potted singly into a 48-sized pot, stopped at the second rough leaf, and transferred as it grew into a 24-pot. Two shoots appearing from it the strongest is selected, cutting the other out, and training that left to a small stick, rubbing out the side shoots as they show. Having plants of this description by the first week in June, the first step is to prepare the house for their reception by removing such plants as *Pelargoniums*, *Fuchsias*, &c., that will shed their leaves if they have not a cool airy situation, only retaining plants that will bear a warm moist heat, as *Cockscombs*, and not a single climber likely to shade the Melons. This done, shut up the house, sprinkle the floors and walls, and shut the door.

When the plants are ready to be shifted, which is when they have filled the 24-sized pots with roots, drain a 13 or 15-inch pot well, not putting in too many crocks, but a few, and some of the roughest compost over them. Strong loam is best, though light soil, also that so strong as to be clayey, will do, only it must be used differently. If strong and clayey pot the plant lightly, covering the stem no deeper than the seed leaves, and press the soil lightly round the ball; if strong, but not clayey, squeeze the soil firmly round the ball; but if light, in addition to pressing the soil firmly, beat it firm with a pestle round the ball and sides of the pot, using the soil rather wetter than when it is strong. When potted it must be decided whether the shoots are to be trained to a trellis about 9 inches from the glass or upright to a stake. If the plant is to be trained in the former manner it may be placed in the house at once, a stake of sufficient length to reach the trellis being put to it, but if not intended for a trellis, stake at the time of potting, using a stick 4 or 5 feet long, according to the height which the plant is intended to attain. Take the plants into the house as each is potted, and every time the house is entered it should feel warm and close. Give a gentle watering, and do not water too freely at first, reserving copious waterings until the pots are filled with roots; and to guard against the soil cracking or leaving the sides of the pot, a little moss placed on the surface will answer perfectly. Keep the soil just moist by gentle waterings until the roots fill the pots, after which water copiously, yet not oftener than the state of the soil shows moisture to be necessary.

Syringe every available surface morning and evening with water of the temperature of the house, and on hot days sprinkle the plants overhead, and especially on the under sides of the leaves. This syringing should be diminished when the fruit or blossoms are setting, and also when the fruit is ripening. When the fruit is set and swelling every alternate watering may be of liquid manure, consisting of 1 oz. of guano dissolved in a gallon of water, or manure water slightly discoloured, but be careful in using the latter. When the fruit begins to ripen give less moisture, both at the root and in the atmosphere.

Very little air need be given Melons in such houses, for the heat being that of the sun is better for plants than artificial heat, yet a little should be given early in the morning, letting the thermometer determine the time: when it reads at 80° admit a little, and if the mercury rises to 90° all the better, only shut up early in the afternoon, or before the temperature falls below 85°.

Train the shoot up to the trellis, removing all buds until it reach it, and then stop at the eighth joint after it has attained that length, none of the eyes between these two points having been removed. So with the shoots trained upright to stakes, remove all the buds at the axils until the required height is attained, and then stop the shoot, leaving six joints. These throw out fruit at the first or second joint, and the process of stopping described elsewhere being attended to, the blooms will set, and two fruits will be as many as the plant can swell well and bring to maturity.

Owing to the frequent watering the plants are rather liable to go off at the collar. To prevent this the soil should be raised in the centre of the pot in order to throw the water towards the sides; but as in that case only the soil at the outside will be properly moistened, it is advisable to raise the soil at the rim also, and thus form a trench between the sides of the pot and the neck of the plant. It will be a advantageous to plunge the pots when the air of the house is kept drier during the ripening process: for dry air deprives the soil too rapidly of moisture, and much watering deteriorates the flavour. It is, therefore, advisable to prevent evaporation by plunging the pot, or covering it with a mat, rather than water freely.

Fruit from plants grown in pots is certainly smaller; but what is lost in size is made up in quality, small or medium-sized Melons being the best flavoured, as the sap is more concentrated on the fruit through the check on luxuriance, which pot culture always exerts on the plants subjected to it.

PROPAGATION BY CUTTINGS.

Though Melons are usually raised from seed, it is possible to fruit them in about half the time if propagated by cuttings. This mode is the most rapid and certain way of

obtaining Melons. The cuttings to be selected are the moderately strong shoots; those having the joints the closest together are the most desirable, and they should be the growing points. Such taken off with from four to six joints, the lowest two leaves removed, and the base of the shoot cut transversely below the lowest joint, will root in a few days if put in a compost of sandy loam. Insert them down to half way between the second and third joint, plunge the pot in a hotbed of 85°, with a moist, close atmosphere, and shade from strong light and sun.

When rooted they may be gradually inured to light, and the shoot must be stopped when it has made eight joints, the two buds or shoots from the two lowest joints being rubbed off. Prior to stopping the plants should be potted in 12-inch pots in rough, strong loam, as described for pot Melons, and the shoots trained upright to stout stakes, if it is intended to grow the plants in pots; otherwise when well rooted they should be planted out of the pots in which they were raised, or 24's, into beds prepared for them. These are not different from those in which Melons raised from seed are planted, only they are made all at once, and there is no after-earthing. The soil should be raised a little in the centre of the bed, forming a ridge its entire length, so that in watering the water may drain from the necks of the plants, or from the centre to the sides of the bed. The Melons are then planted along the centre of the bed at 1 foot apart, every other plant being taken to the front, whilst the others are trained towards the back. If the bed is not in proper order, it is useless to plant Melons from cuttings in it, for they are not, like those raised from seed, to be burned or roasted the first fortnight with a strong bottom heat, and afterwards starved for weeks into fruiting. Plants from cuttings must be planted in a bed in every way suitable for their growth—that is, affording a steady bottom heat of from 80° to 85°, and a sweet top heat of 65° or 70° by night. Slight shade should be given for a few days after planting.

The shoot from each cutting should be taken to the front or back of the frame without stopping, but if it lose the leading point all the shoots except that coming from the third joint should be removed, the part above cut down to it, and this shoot trained to the back or front. When the shoots have grown to within 6 inches of the sides of the frames, or have made six to eight joints, the point of each should be pinched out. This will encourage side shoots or laterals, which will to a certainty show fruit at the first or second joint, and they being stopped at the joint above the fruit this will set freely, and swell rapidly. The plants if watered occasionally with weak liquid manure, will produce from two to four Melons, each of about a pound weight, and of the most delicious flavour, by the time that those raised from seed will be about setting their fruit, presuming them to have been sown at the time the cuttings were inserted. I have known plants from cuttings transferred with the flowers set from six-inch or eight-inch pots, into beds such as are usually prepared for planting Melons, and in ten days they had fruit on them the size of a goose egg, which fully swelled in thirty days after planting, and in twenty more they have furnished ripe fruit.

An important point in this mode of growing Melons, is to plant out the cuttings immediately they are well rooted, which they will be in about a week, for if they receive a check, or are allowed to remain in the pots until the roots mat round the sides they will do no good. Whether grown in pots or planted out they should not receive any check, but be kept growing, potted immediately when rooted into their blooming-pots, or planted out in the fruiting-bed, and kept in a growing state until the fruit is ripe. The cuttings are best planted or potted when five days or a week old, and if they have female blossoms on the point of expanding, these are the plants to produce ripe fruit in seven or eight weeks.

There is no difficulty in getting the flowers of plants from cuttings to set, for they do so most freely, and though the plants may be but a few weeks old even from the seed, they seem to have arrived at that stage when their whole vital forces are concentrated on the production and perfection of the fruit, or, in other words, the propagation of the kind. Experience has taught us that the fruitful laterals are set after the main shoots have been cut back. In a cutting

the effects are most marked and striking in Melons. The shoots are less gross, the joints closer and more compact, the leaves are smaller, the flowers much more profuse and free-setting, the fruit is earlier and smaller, and the flavour higher though less juicy. The duration of such plants is short, for the principle of growth is paralysed by the severance of the plant from its original root, new parts are called into action, resulting in precocious maturity, closely followed by early debility and death.—G. ASHBY.

(To be continued.)

THE ASSISTANT SECRETARY OF THE ROYAL HORTICULTURAL SOCIETY.

I THINK there is great cause for complaint against the Assistant Secretary of the Horticultural Society, in not sending out the Numbers of its "Proceedings" earlier. I received mine on Monday last, and in them it was announced that a ballot for Orchids would take place on Friday next, but that it was necessary to apply for a written form on Tuesday the 17th. Now, to any governor living at a distance, this was impossible, as it was in my own case.—R. H. POLES, Ware.

[This is only one of many complaints, showing gross neglect on the part of the Assistant Secretary.]

POTATO CULTURE.

LAST year I had the pleasure of taking several prizes for Potatoes. The way I grew them is simply this:—

My first lot I plant (weather permitting) as early in February as I can make it convenient, doing so on a south border richly manured. I cut all the eyes out of each set, with the exception of one or two, and bury the sets about 3 inches. I plant them 3 feet between each row, and 18 inches between the sets; and to protect them from the frost I shake a little offal hay over them.

That is how I grow my exhibition Potatoes; but in setting an ordinary crop the distance between each row is not more than 2 feet, and 1 foot between the sets. This is for growing what we call the "Farmer's Glory," or any other common variety of Potatoes. I water them now and then with a little salt and manure water. I should be very much obliged to any of your readers if they could give me any information as to the sort called the "Early King." It is a round Potato.—E. W.

LIFTING THE ROOTS OF VINES.

IN THE JOURNAL OF HORTICULTURE of November 29th, page 430, I read an account of very successful Vine-improving. I mean that of the friend of "W. C.," who lifted the roots in September, and only lost one Vine, a Muscat. He has had better success than myself; but before I proceed further let me begin at the beginning of my story. I came here rather more than two years ago. There is a good extent of glass under my charge—viz., two vineries, a greenhouse, a plant stove, and a range of Melon and Cucumber-pits. When I first came, I was told that in one of the houses there was no fruit that year, in the other there was a sprinkling, but the bunches were very much shanked. I meant to lift the roots at once, but having some improvements on hand, and my time being fully occupied, I saw plainly I could not do them justice. My employer was very anxious to have them improved; but seeing I could not manage everything, we agreed to let them remain for another year, and I would see what they did; the result was the same as in the former year, only still less fruit, and every bunch shanking. I knew well enough that the roots were at fault.

In September, 1863, I lifted the roots, and renewed the border, proceeding as follows:—I had two assistants, apprentices; we took off nearly two spits of soil before we came to a root. I had previously examined the border, and found no roots within 2 feet of the surface; we then took out a trench in front, and began in the usual way to work back with a steel fork, and as each Vine was taken up, the roots were wrapped up in matting enough, as it rained more or less

nearly all the time they were up. I never saw such miserable roots; not a fibre was to be seen, and they were in a rotten state, and down amongst the gravel, I do not know how far. The border was taken out to the depth of 2 feet 10 inches, and the bottom being gravel, there was little necessity for draining, but I did so in order to make assurance doubly sure; for the garden slopes towards the front of the border, a walk going along the front, in which I noticed water standing after heavy rains. The roots of the Vines, I ought to state, are all outside; the border is 12 feet wide, and as long as the two houses, which are each 30 feet in length.

After the bottom of the border was regularly drained, six drains across, and one along the front as a main drain, it was sloped to the front, and then we put in a foot or nearly so of rubble stones, and above that a layer of turves, grass side downwards. Now for the mixture of which the new border was composed. I was not allowed any more turves than would cover the stones, but there were a few over. I procured ten or twelve cartloads of half-decayed couch grass, fine open stuff, and a similar quantity of turfy road-scrappings, and a load or two of lime rubbish. The old soil was very good stuff, it had been all put in when the houses were built, about forty years ago. I had to use a good deal of it, as I could not obtain enough of fresh soil. I put it in in layers—first a layer of the old soil, then one of the other stuffs, time about, till I came to lay the roots out. They were all carefully pruned, and nicely laid out, putting some fine rich soil over them. After we had put on another layer we gave a nice shower of water to settle the earth about the roots, and then finished off. The houses were shaded and syringed for some time. The foliage flagged and faded notwithstanding, and the wood was very imperfectly ripened. I pruned the Vines about the end of December, and cut out more than half the rods, leaving only two to each sash, and all the young ones coming from the bottom. I cannot tell what system was aimed at by my predecessors, it was neither the spur, the long, nor the short-rod system.

Now for the result. All the Vines broke but three, which are quite dead. Some of them made pretty good shoots, others indifferent, and others only burst their buds, and made a leaf or two. I gave no fire except in the months of October and November, 1864, to help to ripen the wood. I watered the border frequently during the dry summer we had, with pure water only. The wood is not very well ripened, and I have pruned them nearly close in again. I examined the roots when I was taking out the dead ones, and find some have made nice healthy fibres. I have given them no protection as yet, as I thought I would have to take them all out. May I look for any fruit this year? and will you advise me to assist them with a little fire, beginning about the end of next month?

I have a fine lot of young Vines of last year from eyes; they are in 10-inch pots, and most of them grew to the

length of 15 feet, but were long in ripening, as it was well on in February before I had the eyes. I intend to plant them among the old Vines, and have pruned them to the length of 4 feet, as they will require to be that to reach the first wire. I have a few for fruiting in pots, but will not start them for a month yet, as they were so long in ripening; they are in 12-inch pots.—J. H., *Nairnshire, N.B.*

[So far as we can see you have done the general work well. When the roots of Vines are so rotten and decayed as you describe yours to have been, it would have been better to have made a suitable border and planted young Vines at once. The fact that the Vines that did pretty well made nice fresh fibres, showed that the moving and lifting in favourable circumstances is a very good plan for renewing the health and fertility of Vines. You would no doubt have succeeded better if you had forwarded the ripening of the old Vines before taking up the roots. There would then have been less chance of flagging. That flagging should be prevented by shading, a moist atmosphere, and syringing. By such means some of our great gardeners have raised and replanted Vines in May and onwards. It is just possible that you would have succeeded as well by "W. C.'s" plan, and after removing the two spits of soil without roots have placed a little fine turfy soil and lime rubbish on the top to encourage the roots upwards. You say nothing of protecting your border in the winter of 1863 and 1864, though that would have formed an item of success if the soil had been warm enough to encourage a slow rooting all the winter. Unless the old soil was very good indeed it would have been better to have used only a little of it, even if you had only made a third or a half of your border at once. The old soil placed loosely in a heap would have been all the better of the exposure, and might when well aired have been afterwards used as part of the compost. You did right in allowing the Vines to break naturally without any fire heat; but we should have advised giving a little fire heat in May and June, with a corresponding moist atmosphere to encourage growth, and then again in dull days in August and September to hasten maturity, as for that purpose one fire then would be worth half a dozen in October and November. The fire heat in spring with a moist atmosphere and a little heat in the border might have made vigorous out of indifferent growth. The summer with us has been sunny and hot, and your crop next season will depend on the ripening of the wood where it is pretty good. We cannot say more of success in that direction. We would, however, advise planting fresh Vines where the old ones have done badly. You cannot err in making sure by planting plenty, as you can easily cut out when too thick. The system of pruning is of little consequence. Let the Vines be healthy and the wood well matured, and cut how you may you will be sure to get fruit if you leave buds. We would advise covering the border to keep out wet and cold at least, and let the Vines break naturally again.]

METEOROLOGY OF ELLENBOROUGH PARK, WESTON-SUPER-MARE.

1864.—MONTHS.	TEMPERATURE.					BAROMETER.			Mean amount of cloud.	Rain in inches.	Days of rainfall.	Mean Max. force of the wind.	DIRECTION AND RELATIVE FREQUENCY OF THE WINDS.									
	Mean Max.	Mean Min.	Mean.	Extreme Max.	Extreme Min.	Mean.	Extreme Max.	Extreme Min.					S.	W.	N.	W.	N.	E.	S.			
January	45.3	34.3	38.8	53	19	30.26	30.70	29.85	6.5	1.07	12	3.0	6	2	4	7	11	14	1	9		
February	42.0	33.6	37.8	54	22	30.03	30.42	29.34	6.2	1.56	13	3.0	7	5	5	20	6	5	6	3		
March	49.0	37.7	43.4	59	30	29.70	30.28	28.88	5.7	2.77	14	3.7	12	7	10	14	7	9	3	0		
April	57.6	43.1	50.3	70	37	30.10	30.38	29.73	4.9	1.49	11	2.4	6	5	8	12	15	5	4	3		
May	67.4	49.9	58.6	86	35	30.09	30.34	29.70	5.0	0.76	10	2.6	20	11	15	16	7	3	3	2		
June	69.1	52.9	61.0	77	46	30.07	30.32	29.45	6.2	2.10	20	4.6	24	3	8	3	5	4	1	0		
July	73.9	55.6	64.7	81	48	30.13	30.27	29.73	4.2	1.32	9	3.2	15	10	11	12	10	1	7	0		
August	72.0	52.5	62.3	80	42	30.26	30.57	29.85	4.3	0.75	6	2.8	17	13	14	11	3	4	8	3		
September	66.3	51.4	58.8	72	43	30.01	30.42	29.30	5.8	1.85	22	3.3	20	7	12	4	8	2	2	2		
October	58.3	44.4	51.3	65	36	29.92	30.41	29.00	6.5	2.10	11	3.6	7	5	4	18	7	9	6	3		
November	50.0	36.2	43.1	56	27	29.97	30.72	28.82	5.8	3.65	14	3.4	16	2	7	11	9	5	2	4		
December	43.6	34.7	39.0	49	19	30.07	30.60	29.48	7.3	2.36	11	1.6	6	2	4	12	10	4	2	6		

EXPLANATION.

Cloud.—This column gives the mean of three or more observations per day, from sunrise to sunset. Scale 0 to 10 (estimated). Force of Wind.—The average of extreme force during the day (twenty-four hours). Scale 0 to 12 (estimated). Direction of the Wind.—This gives surface currents obtained by vane or smoke, from three observations per day, from sunrise to sunset. Thermometer in north aspect, 4 feet above the ground. Barometer near sea-level. Rain-gauge 3 inches above the ground, and near sea-level.—THE DOCTOR'S BOX.

ROYAL HORTICULTURAL SOCIETY.

THE prominent feature on this occasion was the magnificent bunches of Grapes from Mr. Miller, gardener to the Earl of Craven, Coombe Abbey. The six bunches of Barbarossa which he sent weighed collectively 36 lbs.; the largest was 7 lbs. weight, and about 16 inches long from the shoulders to the tip, and all the bunches were handsome, compact, and even in the size of the berries. The six bunches of Lady Downes' from the same exhibitor were also very fine, with large regular berries. Mr. Miller also exhibited a skilfully drawn plan of a portion of the gardens at Coombe Abbey which he has laid out, representing the fruit and kitchen garden, a long parallelogram with the forcing-houses on the north and east sides, the whole surrounded by pleasure-grounds. The extent is from 16 to 20 acres, but when finished these grounds will occupy about 40 acres. As a specimen of garden design this plan was highly creditable to Mr. Miller.

Mr. Bull of Chelsea exhibited a collection of Aucubas comprising a variety with leaves longer and more lanceolate than the common kind, a variety called elegantissima, with large leaves, of which the central portion was yellow, broadly margined with green, and the male and female plants of the species, the latter in berry. For the last-named, also for the collection, first-class certificates were awarded. From Mr. Bull came also an Elæagnus, brought by Mr. Fortune from Japan, and having handsome white-variegated foliage, and another called aureo-marginata, in which the leaves were dark green with a yellow margin. For the former a first-class certificate was awarded.

F. J. Graham, Esq., of Cranford, sent a seedling Russian Violet called the Czar, with dark blue flowers double the ordinary size. This variety, it is stated, has been in bloom for two months out of doors, and flowers most abundantly in spring. It promises to be an acquisition.

Of other objects, Mr. Aldred, Kilburn, sent Liliun auratum, seedling Cinerarias, one with variegated leaves, and Double White Primulas, for which he had a second-class certificate. A similar award was made to Mr. Ingram, gardener to Her Majesty, for six Chinese Primulas. Mr. Stedman, Thornton Heath, contributed Violets; Miss N. Ffarrington, Wooden Hall, Lancashire, a dish of home-grown Almonds; and Mr. Bullen, gardener to E. Budd, Esq., Leatherhead, three good Queen Pines, for which he had a first-class certificate.

RETINOSPORA OBTUSA AND OTHER CONIFERS.

I AM much obliged to Mr. Welsh for his statement confirmatory of the hardness of Japanese Conifers in the north of Ireland, but I am still at a loss to understand the cause of Retinospora obtusa being here yellow at the tips—in fact, in the case of small plants, the greater portion of them are of a bright golden colour, not the sickly hue arising from the shoots being unripened, as we see in so many things, but they appear as if it were the character of the plant to be yellow, instead of green, like the Golden Holly and some other trees. I have no doubt that this Retinospora, as well as its fellow, R. pisifera, will be found quite hardy; but so far as I can judge from what I have seen and what is known of Sciadopitys verticillata, it will never become a useful tree in this country. One that I have had for three years makes no progress whatever, or next to none, and some other growers report on it in a similar way. I am afraid that Torreya grandis will not prove hardy, which is much to be regretted, as it promises to be of better habit and quicker grower than most new things in its way.

I have not yet seen a good specimen of Thuopsis dolabrata, and would like to know if it is likely to assume the character of a tree. Most of the plants that have come under my notice, including one or two we have here, seem to require a stick and close-tying to make them anything like upright, while the stem does not seem to increase in thickness like Cupressus Lawsoniana and others, which, when in a young state, have a semi-pendulous character. I expect it will have to be coaxed into shape if it ever assumes tree-like proportions. When speaking of these matters might I not say that the young growth of Arceuthobium Resinifer, and can report

favourably of it? Some time ago I heard of it exceeding A. excelsa in beauty and symmetry. Is this really so? and, as new Pinuses are so eagerly sought after, it would be well to let the merits or failings of each be made known by those who have had experience with them.

I am sorry I can neither confirm nor differ from Mr. Fish in his report of rabbits eating off the young shoots of Mahonias, but I will take more notice of them when the growing season comes round again.—J. ROBSON.

PLANT JUDGES.

THE remarks made by your correspondent respecting the management of flower shows, appears to me to deserve the attention of all interested in floral exhibitions, and lest it should be thought an officious obtrusion in me saying anything upon the subject, I will state my reasons for so doing.

Last summer I was appointed one of the plant judges at a large exhibition in the north. I soon found that my colleague was intimate with some of the exhibitors and knew their plants, and the same remark applies to myself. On two or three occasions we differed as to which collection should have the first award; on each occasion an umpire was called into the tent, whose decision, of course, was final, and in each case he decided against me, the umpire, of course, having the same leanings as my fellow judge.

Now, I do not mean to impute unworthy motives, because that would cut both ways, although I may state that in one glaring instance the collection that was put second was about 50 per cent. superior to the first. What I denounce is the principle of having judges acquainted with the collections they are judging. They ought to be, as far as possible, strangers to the exhibitors and their products. I know in some cases this is almost impossible, more particularly at small shows; but in the case of large exhibitions, such as the one to which I have alluded, it would be much more satisfactory to secure men from a distance and unacquainted with the collections they adjudicate upon, and I have an impression that this course would give satisfaction to exhibitors.—BRUCE FINDLAY, *Botanic Gardens, Manchester.*

OBITUARY.

THE LATE MR. WILLIAM COLE.—We much regret to announce the death of Mr. William Cole, of Fog Lane Nursery, Manchester, who has occupied a high position as a plant grower during a period of twenty-three years. Those who had watched him for the last three or four years, saw that hard work and mental anxieties were telling upon him. The up-hill work of establishing a large nursery business, and maintaining a world-wide reputation as a most successful plant grower and exhibitor, was no ordinary task, and, as with thousands of others, Nature gave way, but the name will long remain in the memory of plant growers. Erysipelas and fever laid hold of him, and after a brief illness a peaceful death awaited him. He died December 28, aged fifty-two. Originally following another pursuit, circumstances led him to adopt that of gardening, and he at once placed himself under Mr. Robinson, gardener to — Delafield, Esq., Tunbridge Wells, with whom he remained three years. He then went into Messrs. Cormack's Nursery at New Cross, and we believe Mr. Charles Turner, of Slough, was in the establishment at the same time. Both have become eminent, each taking a lead in the two sections of plant-growing, and continuing fast friends. In 1841 he went as gardener to — Lewis, Esq., of Blackheath, and here began his career as an exhibitor. Commencing with Fuchsias, and being encouraged by Mr. Lewis, he followed with Heaths, &c. In 1845 he became gardener to H. Collyer, Esq., of Dartford, and remained with him until Christmas, 1853. During that period he fought many a hard battle at Chiswick and the Regent's Park with the late Mrs. Lawrence, and being well matched, Mrs. Lawrence, who at that time stood high for plant culture, found in Mr. Cole sometimes a defeating opponent. As a sound, practical plant grower,

William Cole stood in the foremost rank. He was the friend of such men as Barnes, Stanley, Green, Fraser, May, Dodds, and others, whose names are well known. Few men have brought into the exhibition tent more specimen new plants than he did. He sought eagerly for new things when at Dartford, and then did his best to bring them out as exhibition plants. We believe we are correct in saying that he was the first to bring out in this way Rollisson's variety of *Ixora javanica*, *Genetyllis tulipifera*, *Franciasea eximia* and *confertiflora*, *Ixora alba* and *salicifolia*, *Eugenia amona* and two other kinds, *Allamanda nerioifolia*, *Hebeclinium ianthinum* and other plants. We well recollect how he experimented with *Stiffia chrysanthia*, a promising-looking subject as it appeared in the illustrations of a Belgian periodical, but which fairly baffled him. In 1853 he was strongly recommended by Mr. Turner as the manager of the Fog Lane Nursery, Manchester, then just started; soon after he became the proprietor, and year after year he fought his way as the most successful exhibitor at the Floral Exhibitions in the Midland and Northern Counties of England. Manchester, York, Bishop Auckland, Ripon, Leeds, Bradford, and many other towns owe much to him: for Cole's plants not only helped their shows, but spurred gardeners on to similar successes. He was occasionally blunt in his manner, but we are certain that regret for his death will be universally felt. The expression used in a letter to the writer of these remarks by a well-known exhibitor in Scotland, who defeated Mr. Cole at Glasgow last August, will be shared by many, especially by those who knew him best, "We have lost a truly clever man." He has left sons, three of whom will carry on the business as usual, for the benefit of the widow and family.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE January meeting of the Entomological Society was held on the 2nd inst., and, as may be surmised, was but thinly attended in consequence of the festivities of the season preventing many of the members from joining the meeting. The chair was occupied by the President, F. Pascoe, Esq., F.L.S. The Secretary gave notice of the proposed alterations in the list of the Council and officers to be made at the ensuing anniversary.

Mr. F. Bond exhibited some minute Moths, *Ephesia ficella*, which he had succeeded in rearing from cork, the species having been previously bred from dried Figs, whence the specific name. He also exhibited specimens of *Drepanaria olerella* of Zeller, and a strange series of specimens of the common Ghost Moth, *Hepialus humuli*, captured at Lerwick in Shetland. Out of twenty nine specimens received from this locality, only two exhibited the ordinary pure white spotless appearance of that sort; the whole of the remainder were more or less strongly marked with the peculiar streaks and marks of the wings of the common females.

Mr. A. E. Wallate exhibited an extensive collection of Beetles which he had recently received from Penang, including two hundred species of Longhorn Beetles, of which not fewer than seventy were new to science and distinct from any which he had himself collected whilst at Singapore.

The Rev. Hamlet Clark, on behalf of the Rev. P. Cambridge, exhibited an interesting series of insects of different orders, collected in Egypt by the latter gentleman, who had remarked that insects as a general rule were rare on the banks of the Nile, but that he had succeeded in obtaining a considerable number of minute species of Moths. He had also reared a species of Butterfly belonging to the genus *Thecla* from the large pool of the Gum Classa, and had observed that a considerable space of the front of the temple of Denderah was coated to the depth of several inches with the nests of a species of Mason Bee belonging to the genus *Chalcidoma*, which, together with its parasitic bee attendant of the genus *Culicorys*, were flying in vast numbers about the temple.

Mr. Rowland Trimen communicated a note from the Cape of Good Hope on the synonymy of *Nymphalis Jahlusa*, Boisduval, described in his work on the Butterflies of South Africa, and which he considered as identical with *Charaxes Argynoides*, Westwood.

A note was also read from the Rev. J. Collins, on the capture of a considerable number of specimen rare Moth *Dasypolia Templi* in stone-quarries and loose stones near Huddersfield.

A memoir by Mr. S. Stone was also read, containing account of his observations during the past year, natural history of different British species of Wasps, most remarkable fact mentioned by the writer was the prevalence of an infectious disease in many nests, the larvae were destroyed, their bodies becoming yellow, the cells as early as the month of August, so that the nests thus came to an untimely end. Other nests attacked by large numbers of Mites. Mr. Stone described the manufacture of the remarkable nest seen by him at a previous meeting, in which two distinct of Wasps jointly assisted in building the nest, with consequently parti-coloured, each species employing a different kind of wood in constructing the envelope.

Mr. Stevens announced that M. Douchard, who started to South America on an entomological expedition, had arrived safely at San Tomaso, Venezuela.

WORK FOR THE WEEK.

KITCHEN GARDEN.

CONTINUE to prepare ground as directed last week. If any part of the garden is wet drain it effectually, drains 3 feet deep and 20 feet apart. Use tiles and place 6 inches of brickbats, stones, or clinkers, tiles; and before filling in the soil shaft a small quantity of litter over the stones or other material, which will the drainage more perfect. Cabbage, try a small or Early Dwarf York on a warm border, and fill up all in Cabbage and Colewort plantations, which show the surface constantly stirred to prevent the frost playing them. Onions, the ground intended for the be benefited by a top-dressing of well-decomposed, which should be forked in and well knocked about on dry mornings. Peas, sow a succession, and also c Beans; and between the rows of Peas try a row of Spinach. Potatoes, where the ground is light and d Ashleaf or some other early sort may be planted. Sow a succession on a sloping bank or border, and a the protection of those coming on. Follow up with and system the hoeing, surface-stirring, and disting advancing crops. Destroy mice.

FRUIT GARDEN.

Pursue vigorously the pruning and nailing of w trees in favourable weather. Pruning Vines out should have been finished long ago; if not, let no last. Cut out old wood from Raspberries, and c canes not wanted for fruiting. Replace decayed stat the fruiting-joints neatly thereto, for which purpo twigs of any tough willow are very applicable. Dr light manure, and dig the ground between the rows, and remove the suckers from Filberts, which ar managed properly except in Kent. Young-planted trees should be securely staked, using a little hay at the tie to preserve the bark. Dust over on dam ings with soil and lime to disperse, and which are by birds. Let the fruit-room be looked over, and eve showing decay removed. Slight frosts must occasio used.

FLOWER GARDEN.

Wherever there is a large extent of mixed shrubbe care is necessary to prevent the stronger-growing from overgrowing the weaker ones, and it will b better every few years to lift and replant the form to prune them severely, which by inducing the gr luxuriant wood prevents profuse blooming. Never a margin of bare earth to intervene betwixt the grass plants. Such should be covered with low-growing as Periwinkles and things of a similar habit; and th over the remaining space should be made to cover s of the border as possible. Prepare ground for Ros in groups or single rows. If the soil is poor rei much as possible, and replace it with equal quan rotten dung and loam. To have Roses in perfecti must have a rich soil. The pruning of the more

kinds may now be done. Should, however, some Provence, Moss, and other summer-flowering sorts be required to bloom late, reserve a portion till April for that purpose. Should heavy snow or severe weather set in, Pinks and Carnations planted in the open borders will run some danger of destruction in those localities where hares and rabbits abound. Protection can be given by laying small pieces of Larch spray or branches between the rows of plants, and then placing other branches on the top of these. Air and light have free access to the plants, and as spring advances the coverings are removed; for, as vegetation commences, more palatable food in the shape of young clover, &c., will entice the rabbits and hares to feed at a distance.

GREENHOUSE AND CONSERVATORY.

The unsettled state of the weather lately, has called, and will probably continue to do so, for much judicious management in regulating the temperature. While cold, biting winds prevail much caution must be used in admitting air. It will be necessary to support a temperature varying from 45° to 50° by moderate fires. Naturally plants make little progress at this season, but they may be stimulated to unhealthy activity if attention be not directed to the regulation of the temperature; a forced and premature growth will for ever injure plants both in health and appearance. Repressing undue activity at this time will in no wise enfeeble plants, or prevent their perfect development at a later and more favourable season. Care must be taken that Camellias receive no check, or their buds will be endangered. *Brugmansia sanguinea*, a noble conservatory plant, demands similar attention.

STOVE.

Still be cautious in the application of more heat. For the Orchids it is far better, the year having only begun, that they start somewhat later, with a free growth than to make a premature and stunted one. Take every care that a due proportion of moisture is maintained in the atmosphere. Although the majority of this tribe require to be very dry at the root during the rest season, yet they enjoy and require a somewhat moist atmosphere, more especially if in a state of constant and lively motion.

FORCING-PIT.

Bring in a successional lot of bulbs, &c., and if not already done take all the hardy forcing plants under the protection of a greenhouse stage, or even a warm shed, or the frost may have them in its cold embrace at a time when you would wish to introduce them to warmer quarters. Apart from this, it is advisable to excite them gradually before they are introduced to the forcing-pit. Let the temperature be from 60° to 75°, with sunshine. Shut up early with a moist atmosphere, but give a little air, if possible, before leaving the fire for the night.

PITS AND FRAMES.

Sow on a gentle hotbed for pricking-out Cauliflowers, hardy Lettuces, Red Cabbage, and a few Horn Carrots. See that Cauliflowers in frames and hand-glasses have proper attention in giving air, removing decayed leaves, stirring the surface and placing dry earth or dry charred refuse among the plants.—W. KEANE.

DOINGS OF THE LAST WEEK.

LABOUR POWER.

GENERAL work very much the same as last week, with the addition to attending to many little matters too numerous to mention. Sometimes people write to us inquiring what labour power they ought to have for such a sized garden, telling us the old story about the man to the acre. We are always forced to give a very qualified reply to all such questions. We have seen an acre of garden-ground so managed, that a single man all the year through must have had a comfortable time of it, so comfortable that like many of our forefathers when John Frost asserted his supremacy, he might go and enjoy himself with any sport that was then in progress. We have seen other gardens of less than an acre, so laid out, supplied with glass, &c., and so much wanted from a small space, that three or four times the labour power could have enough for every one to be kept

kept so as to be passable, is a very different affair from keeping everything in first-rate order. We recollect very well of two gardens very much alike, except in the matter of keeping. In the one two men were kept, in the other four. In the first the walks were rolled once or twice a-year, and a little roughness was no objection, nor yet a few weeds, if they did not assume giantlike proportions. In the second case the lawn was rolled every morning in summer with a light roller to scatter the dew, when there was any, that the ladies might walk earlier upon it without wetting their thin-soled slippers; and the walks were generally rolled at least three times a-week, and so free of a leaf or a weed were they kept, that the proprietor if he noticed a weed anywhere above 1 inch in height, was almost sure to give himself the trouble of going after it, pulling it up, and laying it down very carefully in the centre of the principal walk, just to act as a quiet hint to the gardener. That employer was a noble-hearted man, and though as great an enemy to idleness as ever lived, would at the same time have been horrified at any in his employment being overworked, or even working as hard as he did himself in his commercial undertakings; and yet though the men were chaffed by their neighbours for having so little to do, it was well understood on the whole that the four men worked sharper than the two in the neighbouring garden.

A number of little matters also, especially if attended with various things foreign to the garden, make all the difference in the labour power required. A gentleman not so long ago, after telling us all about his garden, though perfectly satisfied, thought he might manage with much less labour power; but whatever we thought then, we formed a very different opinion when we learned that men and boys were taken from the garden to beat for the young gentlemen whenever they went shooting—that they had to prepare wood, carry coals to the different places in the mansion, pump water, attend laundry, run all sorts of messages, &c., attend and do all sorts of little jobs at all times and all seasons. No plan can be more wasteful of labour power. It is not only the time thus lost to the garden, but the men get unsettled and unfitted for garden work just in proportion as they are so employed, and to the number called upon to engage in such employment. If there is not enough work for an odd man to attend to all such matters, it would still be advisable to have one man in general for such work, and place him at the garden or farm to fill up the time he was not wanted at the house, &c. It will only be safe, however, to count very little on such extra services out of doors. Many gardens that would be in first-rate order, and a source of happiness and comfort to all concerned, are turned into scenes of endless worry and annoyance merely because the gardener can never depend on his labour. Whatever the amount of that labour, it ought to be kept to the garden as a general rule. Of course there are exceptions and emergencies when everybody would only be too glad to give a helping hand; but we know full well that no garden can be conducted satisfactorily and economically when everybody about an establishment can take and get what help they may think they need from the garden-men.

GARDENERS' DWELLINGS AND HEALTH.

We class these together, because the dwelling more than the nature of the employment, exerts a great influence on sanitary matters. Sudden changes from a hothouse to a frosty temperature may be guarded against by clothing and muffling up. Damp at the feet in dull, muggy weather, may be neutralised by wooden sabots, or india-rubber goshes, not worn longer than necessary, otherwise they will heat and draw the feet, and by the confined perspiration do more harm than good. But no care can ward off the effects of low, damp, shaded, small, unventilated houses. Few can give ventilation in winter, and at the same time avoid cold, cutting draughts. Small rooms are, therefore, apt to be very unhealthy in winter, as the more the heat, the more will the atmosphere be rendered impure by the processes of combustion and breathing, more especially if the walls or floor be damp. In a large room, the fire will form a good ventilator, with the help occasionally of opening the door for a few minutes. And the same with bedrooms. Instead of having in winter to open door or window at night in a small bedroom it is every way much preferable to have

a good-sized room, not crammed with furniture, and a good-sized open fireplace to the chimney. It is hardly possible to breathe an impure atmosphere in the latter circumstances, it is scarcely possible to breathe a healthy one under the first conditions. The non-ventilation and the free ventilation of such small places, we believe from experience to be alike dangerous, and if any openings besides the chimney are made or given for air, these openings, in winter at least, should be covered with thickish gauze, that the fresh air may be warmed before it reach the respiratory organs. We should here take a lesson from the old gardeners with their early Cucumber-beds in winter. They would never have slid down their sashes, and let the air enter all at once. They tilted up the sash very carefully, and hung a piece of matting or gauze over the opening. No keen north-easter was allowed to touch the leaves of their plants until mollified by passing through the hot, moist air seeking an outlet.

There is hardly a possibility of convincing young people of the importance of such little matters. Young men with perspiration freely flowing from every pore, stripped of their upper clothing, will come out of a hothouse without waist-coat and coat, and stop out for half an hour, and will tell you when remonstrated with, that it never hurts them a bit. That may be quite true. Neither did we feel it at the time, but many an aching rheumatism we have had since, as the direct consequence and punishment for such imprudence, and we would like to warn our young friends that law-breaking and law-vindicating generally follow each other. Just let them try and find out how many thus reckless of heats and colds, have lived over forty and fifty years, and of these again how few are there who from rheumatism and other ills have not had reason to regret their youthful carelessness. The punishment for such carelessness may not come for years, but it will be none the less certain and severe at the last.

We have also met with brethren, ripe in years and wisdom, who lived in small lean-to rooms behind the range of hothouses, and though not liking the place made the most of it, and were thankful that they themselves escaped with so few illnesses, and that though obliged to crowd, they were doubly grateful that their children as a whole were so healthy. The heads of the house from their hardy bringing-up had been constitutionally seasoned, and the young members of the family had all the strength and buoyancy of youthful vitality, and we might be thought to lift a warning voice in vain, but for the striking fact, that of the seemingly healthy children thus reared, that we can bring back to our recollection few, few indeed of them, saw their twenty-fifth birthday. The seeds of consumption and other diseases were too surely sown in their young frames in these dark, damp, shaded rooms.

Though little from home for two years at least, it is gratifying to find great changes for the better in this respect. Of course few gardeners could expect such an elegant house as that inhabited by our friend Mr. Kobson, built for his comfort by his kind employers, or such a house as at Trentham, and numbers of other places; but there is a vast descent from such little palaces to such wretched lean-to's as are sometimes yet to be met with, though often existing without the knowledge of the proprietor that things are at all so bad. Between these two extremes there are many mediums of comfort, and to the credit of the gentry and aristocracy of England the time will soon come when the last of these unhealthy places shall be used for something else than human habitations. Let it be laid down as a rule that every living-room to be healthy should have the chance of the sun sending its rays through the windows at some time of the day.

PREPARING FOR POTTING.

In dull wet days had all the garden pots thoroughly scrubbed with warm water. In general we like pure water best. In the spring when filling the same pot over and over again, we are not particular with the outside; but we never like to see a pot used twice without washing the inside. Of course, when the plant is likely to remain some time in the pot, the outside should also be thoroughly cleaned, as nothing looks more woe-begone than a pot covered with greasy slime outside, even if the plant in it should be pretty fair as to its appearance. All pots, too, at

this time are best under cover, as the alternations of frost and thaw, and rain and snow, are apt to crack them when exposed. When properly washed we never make any difference between old and new pots, only when new ones are used for the first time for a particular purpose, it is a good plan to soak them for ten minutes and then dry them again before using. If this is not done, the pot for some time is apt to rob the ball inside of its moisture. This moisture-stealing is moderated by first soaking the pots. No pots should be used until they are dry, as if filled when wet, the ball will not come out so clean afterwards. Using wet pots is as bad a practice as digging stiff soil in a wet day.

GETTING SOILS UNDER COVER.

This should be neglected by none of our young gardening friends who aim at success. The soil should be well aired and dried, for the potting-time fast coming on us. The fine, crisp, aired soil often makes all the difference between success and failure. It will be a great advantage, too, if soil is so far warmed as to be rather warmer than the soil in the pot, the plant in which is to have more room. We have known window gardeners whose great success was partly owing to shifting their plants in February and March in soil that had previously been nicely warmed and aired in a box placed on the hearthstone of the kitchen. We have seen their neighbours fail of success because they used cold claggy soil in March, even though they watered immediately afterwards with water at 80°. This was freezing and next to parboiling by turns, and then giving a plant that required a nice open soil the surroundings of a marsh plant. Hardly any treatment afterwards will make that soil kind and comfortable to young plants.

Having skipped particulars this week, we will conclude with two words of advice to our good friends the window gardeners. *Avoid all checks and sudden extremes.* The above cold, claggy soil would be a sudden check to the young rootlets of the plant you shifted. If the plant was taken from the window of a sitting-room, and thus shifted, and then left with others to stand in some cold shed or outhouse until you have a few more done that you might take them all in at once, ten to one the whole of the points of the roots are killed, and the plant must begin and make a fresh effort, and most likely the first teaching in the way of experience will be shoals of insects attacking the crippled plant. If you must take a plant or two from the room to give them more pot room, keep them out as short a time as possible. They want a greater stimulus to growth immediately after potting than before; therefore, every minute they remain in a colder place is just so far injurious to them. Hence the importance of the kindly aired, warmed soil. Hence, too, the importance of watering the plant with water about 70° some time—say an hour or two at least before shifting it into a larger pot. If the fresh soil is neither wet nor dry, and placed pretty firmly round the ball, it will want little water except just at the side of the ball, before the fresh roots are running freely into it. Flooding with water at this season is attended with two disadvantages. First, It saturates and makes a marsh of the fresh soil unoccupied by roots, and then the rapid evaporation in a warm living-room cools the soil round the roots. For one plant that is lost from dryness in winter, dozens are ruined from over-watering. Secondly, Keep leaves, stems, as well as pots and saucers clean. A dry, soft brush to remove dust, and then a soft sponge to use with soft water about 65° or 70°, are the simplest and best modes for cleaning both upper and under sides of the leaves, and the stems. If plants are not inconveniently large, place a cloth over the top of the pot, place your hand firmly on it, and then turn the top of the plant, and swing it well in a tub of clean water. Where the plants are large and the leaves small, it is often better to syringe the plant well, run the fingers through the upper and lower sides of the leaves, and then syringe well again with clean water. Such extra care on your part will be rewarded by healthy foliage, and freedom from insects.—R. F.

TRADE CATALOGUES RECEIVED.

R. Parker, Exotic Nursery, Tooting, Surrey.—*Catalogue of Agricultural, Flower, and Vegetable Seeds, Fruit Trees, New Plants, &c.*

B. S. Williams, Paradise and Victoria Nurseries, Holloway, London.—*Descriptive Catalogue of Flower and Vegetable Seeds.*
Charles Turner, Royal Nurseries, Slough.—*Catalogue of Seeds for the Kitchen Garden, the Flower Garden, and the Farm.*
Smith & Simons, Argyle Arcade, Glasgow.—*Cultural Guide and Descriptive Seed Catalogue.*

COVENT GARDEN MARKET.—JANUARY 21.

Supplies good, and quotations nearly the same as last week. Apples are still very abundant; good dessert Pears scarce. There consist almost exclusively of Grou Moreau, Beurré de Rance, and Ne Plus Meuris. Forced Asparagus can hardly be had; but of Sea-kale and Salads there is a good supply.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	1	0	to 2	0	0	0	0
Apricots.....	dox.	0	0	0	0	0	0	0	0
Cherries.....	lb.	0	0	0	0	0	0	0	0
Chestnuts.....	bush.	14	0	20	0	0	0	0	0
Currants, Red.....	½ sieve	0	0	0	0	0	0	0	0
Black.....	do.	0	0	0	0	0	0	0	0
Figs.....	dox.	0	0	0	0	0	0	0	0
Filberts.....	100 lb.	40	0	61	0	0	0	0	0
Cobs.....	do.	70	0	81	0	0	0	0	0
Gooseberries.....	½ sieve	0	0	0	0	0	0	0	0
Grapes, Hamburghs lb	3	0	8	0	0	0	0	0	0
Muscats.....	6	0	10	0	0	0	0	0	0
Lemons.....	100	5	0	10	0	0	0	0	0
Melons.....	each	0	0	0	0	0	0	0	0
Malberries.....	punnet	0	0	0	0	0	0	0	0
Nectarines.....	dox.	0	0	0	0	0	0	0	0
Oranges.....	100	5	0	10	0	0	0	0	0
Peaches.....	dox.	0	0	0	0	0	0	0	0
Pears (Kitchen).....	bush.	5	0	10	0	0	0	0	0
dessert.....	dox.	3	0	6	0	0	0	0	0
Pine Apples.....	lb.	6	0	9	0	0	0	0	0
Plums.....	½ sieve	0	0	0	0	0	0	0	0
Pomegranates.....	each	0	6	1	0	0	0	0	0
Quinces.....	½ sieve	0	0	0	0	0	0	0	0
Raspberries.....	lb.	0	0	0	0	0	0	0	0
Walnuts.....	bush.	14	0	21	0	0	0	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	each	0	0	0	0	0	2	0	0
Asparagus.....	bundle	10	0	15	0	0	0	0	0
Beans Broad.....	½ sieve	0	0	0	0	0	0	0	0
Kidney.....	100	2	6	0	0	0	0	0	0
Beet, Red.....	dox.	1	0	3	0	0	0	0	0
Broccoli.....	bundle	1	0	2	0	0	0	0	0
Brussels Sprouts.....	½ sieve	2	6	3	0	0	0	0	0
Cabbages.....	dox.	1	6	3	0	0	0	0	0
Capoteams.....	100	0	0	0	0	0	0	0	0
Carrots.....	bunch	0	5	0	0	0	0	0	0
Cauliflower.....	dox.	2	0	6	0	0	0	0	0
Celery.....	bundle	1	0	2	0	0	0	0	0
Cucumbers.....	each	1	6	3	0	0	0	0	0
Endive.....	score	2	6	3	0	0	0	0	0
Fennel.....	bunch	0	3	0	0	0	0	0	0
Garlic and Shallots, lb.	0	8	0	0	0	0	0	0	0
Herbs.....	bunch	0	3	0	0	0	0	0	0
Horseradish.....	bundle	2	6	4	0	0	0	0	0
Leeks.....	bunch	0	2	0	0	0	0	0	0
Lettuce.....	score	2	0	4	0	0	0	0	0
Mushrooms.....	pottle	1	6	2	0	0	0	0	0
Mustd. & Cress, punnet	0	2	0	0	0	0	0	0	0
Onions.....	bushel	4	0	5	0	0	0	0	0
pickling.....	quart	0	6	0	0	0	0	0	0
Parsley.....	dox. bunches	4	0	6	0	0	0	0	0
Parsnips.....	dox.	0	9	1	0	0	0	0	0
Peas.....	quart	0	6	0	0	0	0	0	0
Potatoes.....	bushel	2	6	4	0	0	0	0	0
Radishes.....	dox. bunches	0	9	1	0	0	0	0	0
Rhubarb.....	bundle	0	6	1	0	0	0	0	0
Savoy.....	dox.	1	0	2	0	0	0	0	0
Sea-kale.....	basket	1	6	3	0	0	0	0	0
Spinach.....	½ sieve	3	0	5	0	0	0	0	0
Tomatoes.....	½ sieve	0	0	0	0	0	0	0	0
Turnips.....	bunch	0	3	0	0	0	0	0	0
Vegetable Marrows.....	dox.	0	0	0	0	0	0	0	0

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

SALE OF APPLES (*Cottager in the West*).—Only choice named varieties realise a high price among London fruiterers. You had better sell yours to the fruiterers in the towns nearest to you.

CORDON-TRAINING (*A Constant Subscriber*).—We could not explain sufficiently without illustrations. Buy a little volume entitled "Cordon-training of Fruit Trees," by the Rev. T. Collings Bréhan. It is published by Messrs. Longman & Co.

GRAPE VINES (*A Grape fancier*).—You had better pot your two-year-old Vine immediately, forcing the roots as little as you can. Whether a White Grape Vine be in-ched on a Vine bearing Black Grapes, or Grapes of its own colour, is of no consequence. The Trebbiano is totally different from the Portugal or White Hamburgh Grapes sold by grocers.

AURICULARS IN A ROOM (*Neophyte*).—The Auriculars will do very well in a cool room where they can have light. Grayson's Asparagus is considered the best, but we think the treatment makes all the difference.

TWELVE HYBRID PERPETUAL ROSES FOR POTS (*Idem*).—Caroline de Meaul, Comte de Nanteuil, Géant des Batailles, Général Jacqueminot, Louise Peyronney, Louise Odier, Jules Margottin, Mrs. Charles Wood, Olivier Delboame, Triomphe d'Alençon, Victor Verdier, William Griffiths.

CLIMBERS FOR WALL (*Idem*).—Jasminum nudiflorum; the common white Jasmine; Escallonia macroantha, E. rubra; Chimonanthus fragrans; Ceanothus americanus; Aristolochia Sipho; Lonicera xata, L. japonica, L. reticulata, &c.; Clematis Hendersoni, Sweetbriar, &c. as the best climber grows.

FRUITS FOR QUEENSLAND (*J. G. Crabb*).—Your letter of the 18th October has been received, and also the transfer of it. Not more than two or three of the Apples can be had in this country. We have all the Pears except Ort, about three of the Grapes, and all the Peaches but one. Thank you for your interesting letter.

COMMENCING VINE-FORCING AT INVERNESS (*J. M.*).—To start in January or February so far north you should at least, in such a house, have six pipes, instead of four. The two extra pipes will soon save their expense in fuel. It is a great waste of fuel to be forced to make the water boil in the pipes at such a distance as 90 feet from the boiler. It will be better every way if the water is rarely hotter than from 170° to 180°. With your present four pipes in such a span-house, we think from the 18th of February to the 1st of March would be quite time enough to begin to force. Then you may have Grapes in the middle of July, or thereabouts, if you have a few early kinds, as Sweetwater, Muscadine, and Frontignan.

GARDEN WALLS (*An Old Subscriber*).—The height of the wall would depend on the laying out of the acre. If a square, or a parallelogram, with the shortest sides to the east and west, then the north wall might be 12 or more feet high; but it would be as well if the south wall were not more than 9 feet. In a narrow garden a high south wall keeps the half of the garden shaded. A nine-inch solid wall would do up to 9 feet in height. If higher 14 inches would be better. A hollow wall would be the most equable in temperature and in dryness, but it must be well tied by an experienced bricklayer, or it may not be stable enough for nailing, ladders, &c. In previous volumes we have explained how the tying is systematically done, and a good bricklayer knows all about it. Built well in this way, a 14-inch wall will cost few more bricks than a solid nine-inch wall. Such new walls should be studded or wired.

GRUBS DESTROYING STRAWBERRY PLANTS (*M. E. G.*).—The white grubs with red heads are the caterpillars of one of the Ghost moths (*Hepialus* sp.), and the darker grubs are those of the common Dart moth (*Agrotis segetum*), which was so extremely abundant last autumn. We would recommend the whole of the Strawberry plants to be carefully taken up and the roots examined, the bed itself thoroughly dug, and the grubs picked out by hand, which would be easy enough from the grub being so large and conspicuous. The ground should then be well dressed with lime water and soot.—W.

GEOMETRIC BEDS (*O. Barton*).—We have no doubt that your geometric composite bed will look very nice. We agree with you that you have not a bit too much scarlet. The scarlet, yellow, white, and purple, will make an excellent blending, and your bed is just large enough to give them effect. Such a large bed so divided will look best when looked down upon and seen all at once. If so viewed we do not see much advantage in raising the bed from the outside to the centre; nor do we see much advantage in the raised basket in the centre, unless that is high enough, and an open space below to see right through it over the rest of the bed. These are minor matters, however, of which those on the spot can judge best. Our friend Mr. Reuben was, we believe, the first to attempt this plan of planting on a large scale. His lines and subdivisions are generally more artistic than geometric. The only objection to the general use of such beds is the difficulty of getting to the plants nearest the centre when the bed becomes one mass. Their great interest consists in the presenting such a mass of contrasted colour, like a carpet, to the eye.

TREATMENT OF VINE CUTTINGS (*J. A. J.*).—From the time that young Vines begin to root and grow they will enjoy a bottom heat of from 75° to 80°, until the roots fill the last pot you give them, and the wood begins to ripen. To thoroughly ripen that wood when it is desired to fruit the young plants next season, the bottom heat should be continued until the leaves begin to turn yellow, when the Vines may be lifted out of the bed for a week, then moved to an open vinery, or a wall facing the south, so as to get well hardened by the sun and air, whilst only as much water is given as will prevent what is green of the leaves flagging. When the leaves turn yellow the pots may be packed on the north side of a fence, and kept cool and dryish there before you wish to start them again, which is best done by giving them a temperature of from 45° to 50° for a fortnight, and then, if convenient, giving them a bottom heat of 60°, increasing it gradually to 75°, and a few degrees more after the buds are breaking. To obtain nice plants for planting merely bottom heat is not absolutely necessary, but you will get much better plants if you can give them a little bottom heat until they are established in eight-inch pots. To insert buds, say on the first day of the year, and gather Grapes from the plants thus formed, say in sixteen or seventeen months from the inserting of the bud, then the bud should at once receive a bottom heat of 60°, and have it increased gradually in a month to 75° and 80°, the top temperature ranging from 65° at night to 85° during the day from sun heat; and if such plants can have bottom heat until they are well established in 12 or 13-inch pots, the sooner will the wood be ripened, and the sooner will the plants be fit for being rested, before again exciting them into growth.

STRAWBERRY FORCING—**EPHYPHYLLUMS**.—The queries of "A READER" on Strawberry forcing; and those of "EPI" who wishes to have a detailed account of the culture of Epiphyllums, will shortly be answered.

DEACONIA NOBILIS (*A Young Gardener*).—It is evident the plant is in very bad health, and you only accelerated the evil by potting it and cutting it down. Your only plan now is, to plunge the pot in a mild hotbed, so as to promote root-action, and keep it there until fresh growths are made. The moist close air of a fernery is not suitable for it, though it would do fairly there in winter; but a vinery would be a better place for it in summer. It is rather a free grower, and requires a stove temperature to grow it well; but you grow it fairly by keeping it in the fernery in winter, and vinery in summer, only do not keep it too wet. A cool vinery is too cold, and a shaded fernery unsuitable for it. Your soil is suitable.

PLANTING VINES (*Delta*).—Decidedly let well alone. There could be no harm in having a few Vines against the back wall, however, but those will not bear against the back wall after the Vines 3½ feet apart, cover the length of the rafters. They will bear at the top where they have light. The thick planting is chiefly useful for getting a house soon filled and soon in fruit. The early fruiting may then be cut away to make way for the permanent ones.

SQUARE FLOWER-POTS.—"Y. Z." wishes to know where these can be purchased.

MELON FRAMES (*W. B. M.*).—A frame 11 feet long by 6 wide, is quite large enough to grow Melons. They can give no opinion as to price, it is subject to the quality of materials and other circumstances.

WOUNDS IN HYACINTH POTS (Hyacinthus).—Lime water will expel them and will not injure the Hyacinths.

VINES FOR CORD VINEY (T. W. U. E.).—Six Vines for a viney where Full artificial heat is given may be two Black Hamburgs, two Black Princes, and two Lady Downes'. *Tecoma mandarin* will do as a climber for your greenhouse.

PEAS—BRAVE (Young Amateur).—Tall Mammoth is the largest Pea. Dwarf Mammoth Hair's, is also large. The two best early dwarfs are Tom Thumb and Bishop's Dwarf. The best early Peas to succeed each other, are Sangster's No. 1 and Dickson's Favorite. For second crop, Harrison's Perfection and Ringwood Marrow are very good. After these follow with Vetch's Perfection, No. 1 Plus Ultra, Knight's Marrows, Woodford's Green Marrow, Champion of England; and for late sowing in July and August, use the early kinds. Of Beans, Massena and Johnson's Wonderful. For the best Cucumber you had better be guided by some of the celebrated growers. Berkeley's "Handbook of British Mosses" will suit you.

SUCCESSORS OF FAVORITE 'A Constant Reader'.—Apples.—Desert: Devonshire Quarrenden, Jonatering, Kerry Pippin, Melheim Pippin, Cox's Orange Pippin, Margil, Ribston Pippin, Ashmead's Kernel, Braddick's Nonpareil, Cockle Pippin, Cornish Gildflower, Nonpareil, Sturmer Pippin, Wyken Pippin. Kitchen: Kerwick Codlin, Cellin, Golden Noble, Hawthornden, Affriton, Dumelow's Seedling, Northern Greening, Royal Russet, Winter Pearmain. Peas.—Autumn Bergamot, Bishop's Tumb, Bessie, Jergonelle, Louise Bonne of Jersey, Swan's Egg, Williams's Bon Chrétien, Winter Netta. Stewings: Catillac. Plums.—Jolly Green Gage, Perdrigon Violet Hâit, Green Gage, Purple Gage, Jefferson, Cox's Golden Drop. Figs: White Magnum Bonum, Washington, Dunsen.

CERASUS (G. D., of H.).—Any respectable nurseryman can supply the Red Cherry and Red Grape varieties.

MELONS FAILING (A Cottage in the Country).—The probable cause of failure was not watering the plants sufficiently, they only being watered four times, which would have been only a proper allowance for a fortnight of fine weather. The soil should have been kept moist, and, unless destroyed by disease, they would have survived the ripening of the fruit. The indifferent setting was probably due to an insufficiency of heat and air, and the not properly thinning the shoots, so as to admit light and air, and thus secure the maturation of the parts destined for bearing.

HEATHS NOT FLOWERING (J. M., an Amateur).—We do not know any difference in the mode of culture that can possibly affect the flowering, if proper treatment is pursued. We have seen as fine Heath grown at Edinburgh, and as well bloomed, as in England. To grow Heaths well they require a house to themselves, and then, under ordinary treatment, they are the freest-blooming of plants. They require abundance of light, and air blowing on them almost constantly, and we think the indifferent blooming of your plants is caused by the want of these. Keep them cool, well aired, and in a light structure near the glass, and your plants cannot fail to bloom well. If you put them out at all in summer they should have the protection of a cold frame, so that the roots may not be dried up in consequence of the sun heating the pots, and also to protect them from heavy rains, admitting air all the same constantly. Charcoal, in small pieces about the size of a hazel nut, may be mixed with the soil, and it is desirable in pots that are at all close; turfy peat, well sprinkled or intermixed naturally with fine siliceous sand, is the most suitable compost.

CALCEOLARIAS UNDER A NORTH WALL (Jerrain).—Allow the cuttings to remain where they are until the last week in March, or beginning of April, by which time they will be well rooted, and may more safely be transplanted to a summer situation. We have about two thousand in two small frames, only occupying an area of 25 square feet each, and they are in a situation where they do not receive any sun whatever. We shall take out the points of the shoots early in March, and put them out in Celery trenches or turpits in a sunny situation in April, and then lift them with balls to their blooming quarters in May. Whilst in the trenches or pits we merely cover with dry straw or lights, with further protection in case of frost; not by the simple process we turn out thousands of the best plants instead of dozens of the we parpered in note. We do not care how small we can keep them over the winter. You may, however, remove them now, but it is only giving yourself needless trouble.

KANSAS OR FRANK (A Young Gardener).—1, *Pieris aquilina*; 2, *Aspidistra Falcata*; 3, *Chelidonium* hirt.; 4, *Lactuca scariola*; 5, *Pilea repens*; 6, *Pieris hirta*; 7, *Litochloa palmaria*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE

PRICE OF NEW-LAID EGGS—PROFITS OF POULTRY-KEEPING.

I know not whether your correspondent "C. S. J." resides in London or the country; but judging from the price he quotes for new-laid eggs at this time of the year—viz., 1s. 4d. per dozen, I presume the latter. The price of new-laid eggs, like everything else, is necessarily regulated by the demand, and I doubt not that what he states is quite correct as to some localities. In London, and particularly at the West End, genuine new-laid eggs are sold retail at 4s. and even 6s. per dozen from November to February. It is true that most dairymen and cheesemongers profess to sell new-laid eggs at as low a price as 1s. 6d. per dozen; but put it to their conscience about being really new-laid, and they will tell you that they are country eggs, and that they purchase them from the dealer as new-laid. Now, I have bought many such new-laid eggs, and found them without exception many weeks old, unfit for hatching and the breakfast-table—in fact, they are eggs picked for their size and appearance,

and probably imported from the continent. Were the public able to depend on getting really new-laid eggs during the winter months in London, 2s. 6d. per dozen would never be grudged, particularly for invalids and ship-passengers.

The preservation of eggs according to my system, published in your valuable Journal, is about to be carried out by an eminent firm; and I doubt not that in a few years we shall be able to purchase by those means well-authenticated fresh eggs at comparatively low prices at all times of the year.

In conclusion, I agree with you that your readers should form their own opinion on my balance-sheet of profit and loss in poultry-keeping, and not accept the figures as implicit facts under all circumstances.—GEO. K. GYELIN, C.E.

BRAHMA POOTRAS.

WE—that is, the Brahma lovers, are gradually building our pedestal; and when we have done, we will put our best specimen on the top, and he shall crow, "Victory."

I can corroborate Mr. Leworthy's statement of an old Indian recognising the Brahma as an Indian bird. I was recently showing my fowls to a gentleman of the civil service, home on sick leave. He is an ardent lover of natural history in all its branches, and was making inquiries as to the habits and merits of the different breeds, when he came to the Brahma. "I need ask nothing about them," he said, "I kept them in India for years."—P. F.

Very likely, but that does not prove that they are not a variety of the Cochinchina. Let the pedestal be large enough for a specimen of each.

HAVING said my say, I had intended to be silent, and certainly on reading Mr. Leworthy's few lines, I thought I, in common with other Brahma upholders, had got all that we could desire—viz., that at Burmah there was a breed of fowl that tallied with our Brahma. I crowed with delight; for I know Mr. Leworthy to be no mean judge of Brahmas, and he has very good ones; and I thought his few lines conclusive. I saw "Our Editors'" note at the end, and in anticipation read their delight that the question was so satisfactorily settled, and that henceforth they intended to consider Brahmas as pure a breed as any other sort of fowl. What was my surprise to find they considered Mr. L.'s note conclusive that they were only a "variety of Cochinchina!" This, I am quite certain, was not the intention that prompted Mr. L. to write, and with the most humble deference to "Our Editors," I submit the reasoning is most false. Shanghai and Ava are upwards of 1000 miles apart, and if this reasoning is correct, any person writing in Shanghai of our island breeds—Game and Dorking, might with far more justice consider them only varieties of the same breed; for the distance between the extreme limits bears but a small proportion to the distance between Ava and Shanghai.

If there can be two distinct breeds of English origin, surely there may be two distinct breeds between Ava and Shanghai.—Y. B. A. Z.

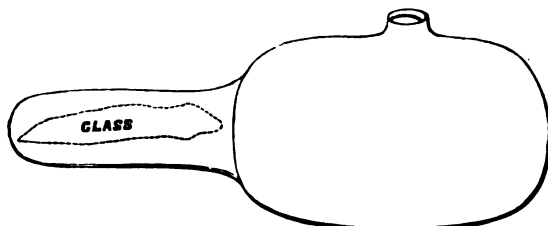
With due submission, the above is all special pleading. Burmah and China join; but it now appears that Mr. Tanner saw the birds about 300 miles from Calcutta—but all this is of little import. Buff and White "Brahmin Fowls" were there; and no one could detect a specific difference between a Buff Brahma Pootra and a Buff Cochinchina. We now must take our leave of the subject, rejoicing that it matters little that Brahmas are a variety of Cochinchina, since they are found to be worthy of patronage.

SEX OF EGGS.

ANY light that can be thrown on this subject is very desirable. "F. H." is told that eggs first laid will produce a majority of pullets, and those last laid a majority of cockerels. My experience teaches me exactly the contrary. Last spring I paid much attention to this point. I found that eggs laid in January and February produced three cockerels to one pullet; March and April three to two; May about equal numbers; June and July the eggs produced a large

majority of pullets. I think that the above figures will not differ materially from those of others who have kept a careful account of the sex of their chickens.—C. S. J.

GLASS IN A FOWL'S GIZZARD.



I ENCLOSE a piece of glass nearly 2 inches long and a quarter of an inch square, which I extracted from the gizzard of a Spanish hen sixteen months old, killed this week for the table. The glass must have been swallowed many months ago, as it is regularly ground, and it formed in the gizzard an excrescence in the shape of the annexed sketch. The hen appeared in good health, was in good condition, and a good layer. In my experience I never saw such a malformation of the gizzard, as the whole length of the glass which was projecting beyond the gizzard was covered with flesh $2\frac{1}{2}$ inches in length and one-eighth of an inch in thickness. Perhaps some of your readers may have observed similar cases without prejudicial effects on the health or functions of the hen.—G. K. GEYELIN.

PARIS POULTRY SHOW.

EVERY one will thank you for your notice of the Paris Show. It is calculated to do much good, and to stir up our supine English public as to the merits of the poultry question. We hope there will be an alteration in the competition next year, and that it will be thrown entirely open. Application was made by one of our principal poulterers to the Minister of Agriculture, but he was told the entries were confined to France. We believe the good respectable old Dorkings would have held their own. They will again next year offer to tilt with blunted weapons against all comers.—B.

SEX OF EGGS—COLOUR OF AYLESBURY DUCKS' BILLS.

I BELIEVE it is well known to ornithologists, that of the Finches, which have two nests in one season, the first contains all cocks, and the second all hens. This would lead us to expect a contrary result to that which your correspondent "F. H." speaks of. However, I for one will take notice of the sex of chickens from eggs laid at various times by the same hen, and let him know the result at the end of the season.

For the comfort of your correspondent, "G. B. H." allow me to say that the light-coloured bill of the Aylesbury Duck is not confined to the neighbourhood of Aylesbury. I, too, have bought Ducks of Mrs. Seamons, and also of a well-known breeder near Grantham, which have not changed the colour of their bills, although I have taken no pains to keep them out of the sun, or to let them out only on frosty mornings, a common recipe for preserving the delicate colour. I have also bred birds from this stock, with light bills. Now on the land where my Ducks are bred, I can answer for neither chalk nor sand being found, nor indeed clay, except at a depth ten times the length of a Duck's bill. I also know of a farmyard in Norfolk, where for several years past some Ducks have been bred with bills the colour of an orange, and others nearly, if not quite, as pale as those of the prize Ducks at Birmingham. Chalk and sand are very abundant there, but that only serves to increase the difficulty. However, I quite agree with "G. B. H." in wishing the orange bill to be admitted into our prize pens, partly

for the reasons he gives, and partly on account of the beautiful contrast it makes with the white plumage of the Aylesbury Duck.—C. H. L., *Rectory, Edith Weston.*

POULTRY-KEEPING FROM A COMMERCIAL POINT OF VIEW.

(Continued from page 57.)

FOOD FOR POULTRY.

WHEN poultry is kept confined its food must be appropriate. A fowl kept in a free state on a farm, can with advantage be fed all the year round with barley or oats only, as she will supplement her meals with animal and vegetable matters of her own finding; therefore, an equivalent should be given to penned-up poultry; but, again, as they have not so much bodily exercise as when in a free state, their digestive powers are weakened, consequently they are subject to inflammation of the bowels when fed on whole grain only. After this explanation my readers will understand the reason why I advocate all grain to be ground, and the meat and green vegetables to be minced; but, apart from the sanitary consideration, it becomes an important economical fact in a large breeding establishment, as it is well known that food made of grain and which requires little exertion of the digestive organs, has far greater feeding and fattening qualities than whole grain.

There is another point connected with feeding to which I wish to allude. The diet should be varied almost daily; but green vegetables finely minced ought to form part of every meal, and occasionally some oxide of iron, and at other times flowers of sulphur, mixed with the food will greatly tend to keep poultry in good health.

FOOD FOR YOUNG CHICKENS.

Indian corn and barley meal, boiled rice, mashed potatoes, bread crumbs, &c., steeped in milk and water—any of the above separately or mixed together will do well. Finely-chopped green vegetables should be given daily, and occasionally hard-boiled eggs chopped fine, and a supply from the vermin nursery. Fine gravel should be put in the inner saucer shown in fig. 18.

Water should be supplied between the two saucers to prevent the chickens wetting themselves, and it should be renewed daily. Clean water and a plentiful supply of food given about four times a-day, combined with the comfort of the artificial mother, will keep the chickens in better condition than when left to roam in search of food.

FOOD FOR THE BREEDING AND LAYING STOCK

May consist of a mixture of the various cereals coarsely ground and made into a stiff paste. This food should be put in the feeding-fountains, figs. 3 and 4, where it cannot be wasted or dirtied. Occasionally in fine weather whole grain can be thrown broadcast in the open run. The other food should be finely-chopped vegetables, such as the waste of the kitchen garden, mangold wurtzel, swedes, &c., in a green state, mashed boiled potatoes and rice, minced boiled meat mixed into a paste with the liquor from the meat, and seasoned with salt and pepper. Finely-powdered oyster shells or a little chalk forms a genial condiment. Powdered charcoal, oxide of iron, and flowers of sulphur alternately, and at given intervals mixed with their food will keep them in perfect health. The best feeding-time is at sunrise, and about two hours before roosting-time.

FOOD FOR THE FATTENING STOCK.

As they are still more closely confined they require a diet of a highly fattening nature and of easy digestion. When once poultry is penned up for fattening, the diet ought not to be varied. There are three different ways adopted in fattening poultry.

1st. Free feeding, consisting in supplying a fowl with food and water *ad libitum*. This takes a much longer time, is more expensive, and less satisfactory as regards the flesh. In this mode four or six fowls are best penned up together, as they will feed more freely than in solitary confinement.

2nd. Forced dry feeding, consisting in cramming the fowl with pills made of suitable food twice or thrice a-day, and giving water *ad libitum*.

3rd. Forced liquid feeding consists in reducing the food

to a liquid state with milk and water, and then pouring it down the gullet by means of a funnel three times a-day, and not supplying the fowl with any water.

PREPARATION OF THE FATTENING FOOD.

Barleymeal, or mixed in equal quantity with Indian cornmeal, should be made into a thick paste with milk and water and seasoned with bay salt. This paste is then either made liquid for liquid feeding, or into pills, which should be dipped in milk and water before they are given to facilitate their being swallowed.

Experiments have proved that seasoning poultry food with bay salt has the following advantages:—

1. To render the fattening of shorter duration.
2. To produce with the same quantity of food more flesh and fat.
3. To give the flesh greater firmness and flavour, and to render the fat more compact and of a finer grain.

Molasses or sugar mixed with the meal has also good fattening properties.

IMPROVED FATTENING PENS.

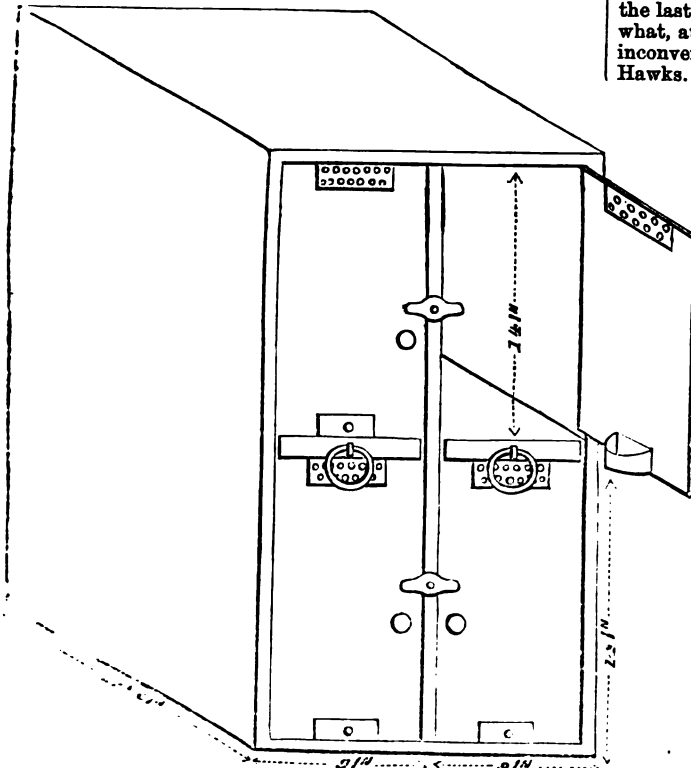


Fig. 22.—Improved Fattening Pens.

These fattening pens are so constructed that they can be placed in the open air, forming a building of themselves. Each fowl has her own compartment, and is thus in solitary confinement, and being unable to see other fowls, fattening is considerably hastened. The floors of the cells should be drawn out daily and cleaned and whitewashed, then returned with the dry underside uppermost and sprinkled with some sand. The cells should also be whitewashed for every fresh occupier. The doors are solid boards with a piece of perforated zinc for ventilation at the top, and a drinking-cup at the bottom. These pens combine all the sanitary advantages for the speedy fattening of fowls.—G. K. GETELIN, *Nell Engineer, London.*

(To be continued.)

MEGRIMS IN PIGEONS.

I SHOULD be greatly obliged by being informed of any one for what is called here the megrims in Pigeons, as we have been much troubled with it lately, and some very

good birds have died in consequence. The birds at first mope about, eat little, and in a day or two begin shaking their heads and twisting them about, sometimes falling forwards. They continue so for a day or two and then die, neither eating nor drinking all the time.

I keep the birds in a good warm cote facing the south. Some have their liberty and others have a covered pen 7 yards by 3, shielded by a house on the north, and latticed in front. I feed them on grey peas, Indian corn, lentils, or wheat, or sometimes old beans, generally three kinds at once. The birds flying as well as those kept in, both young and old, have had it.—AIREDALE.

[I am unable to inform "AIREDALE" of a cure for his Pigeons, but it seems to be apoplexy. If any of mine were so affected, I should try pills containing one grain of calomel and pull out their tails.—B. P. B.]

HAWKS AND PIGEONS.

I HAVE studied your poultry department very closely for the last year to see if there was anything mentioned about what, at least in this country, is considered the worst of the inconveniences to which Pigeon fanciers are subjected—i. e., Hawks. I am led to believe, therefore, either that those

birds are not very numerous in England, or that English Pigeon fanciers know some effectual remedy against the scourge, allowing them at the same time to give the Pigeons their liberty all the year round. I am compelled to have my Pigeons locked up from September to May, and during this long arrest they afford me very little amusement indeed, although my loft is roomy enough; and generally some good birds die-off during the captivity, and others are lost during the first days of liberty in spring.—B., *Gothenburg, Sweden.*

[I am sorry to say we know of no means of preventing the Falcons from taking our Pigeons; but fortunately for English Pigeon fanciers these rapacious birds are not very numerous in England, as gamekeepers have almost exterminated the race, and the smaller Hawks rarely attempt to catch Pigeons. Many years back when residing at Dover, the Peregrines that lived about the chalk cliffs used to make sad havoc among my high-flying Tumblers, but they did not descend into the town to take those that did not fly high. Some quick-flying Pigeons are not easily caught by these birds, and if they have the shelter of a town to drop into generally escape, as the Falcon is shy of following among the houses. Mr. Ackermann, the Pigeon dealer in Coblenz, on the Rhine, who kept a large flight of the Feather-footed Tumblers, told me he used to keep a few pairs of active little Hollanders, which he turned out when he saw the bird of prey approach, and as these would soar up and attract the Hawk, he

could get his heavier birds down and out of harm's way. The little Dutch Tumblers generally saved themselves by their activity, and if hard pressed would drop among the houses where the enemy did not like to follow, unless very hard pressed by hunger.—B. P. BRENT.]

JEDBURGH POULTRY SHOW.

It gives us great pleasure to announce that the entries for the above Exhibition (held on the 18th and 19th inst.), have this year increased in number, and that the quality of the poultry shown has evinced a remarkable improvement also. A reference to the appended prize list will at once convince our readers that the Jedburgh Show this year was well supported by most of the principal breeders in the kingdom. It is certain that no committee of a poultry show can strive more heartily than do the governing body of the Jedburgh meeting to secure public interest and support, each member being as indefatigable as though the whole chance of success depended exclusively on his own individual exertions. Every member of the Committee is constantly

at his post, and all things are carried out with perfect fairness, courtesy, and liberality. As in most public matters, however, there is a weak point where improved arrangements would greatly tend to enhance success, and give increased satisfaction in the sequel to all parties concerned. It is simply this. Independent altogether of the vastly improved quality of the poultry, as compared with former years, now consigned for exhibition to the Jedburgh Committee, the number of pens (491), is considerably too large for the time under the present rule allotted to the purposes of arbitration. It was not until after two o'clock in the afternoon that the birds were all penned and ready for the arbitrations, and at this season of the year night-fall closes within but very little more than a couple of hours of that time; after which dim twilight or lighted candles form but an uncertain substitute at best for the purpose of judging correctly, particularly as all birds themselves are timid and distrustful on the application of artificial light. However practically experienced the parties officiating as arbitrators may be, we are fully assured that their onerous duties would be far more speedily completed by daylight, and with less difficulty to all concerned. It is, we are told, to wait the arrival of the midday train this delay arises, and fears are expressed that the number of entries would be materially lessened were a different plan adopted. Our own experience, however, proves that, however great the latitude allowed for the arrival of the birds, there will always be some laggard dilatory individuals trespassing beyond the regulations. In proof, even in the present case, we find in the Jedburgh printed catalogue, at page 16, the following verbatim announcement:—"Pens 55, 231, 243, 296, and 303 arrived too late for competition, at 6.30, P.M." We can quite understand the really earnest desire of the Committee, as displayed, to give the greatest possible amount of accommodation to all parties concerned, even at the expense of personal trouble to themselves; but we are, nevertheless, assured that the great majority of exhibitors would hail with unfeigned delight a re-arrangement of rules by which all awards should be completed by daylight; and the imposition of a rule, strictly adhered to, enforcing the arrival of the specimens the previous evening would obviate all objections, without materially lessening the competition.

We now proceed to a few brief remarks on the Show itself. It is but rarely we meet with so good a display of *Spanish* fowls as were exhibited at Jedburgh, the veteran exhibitor Mr. Teebay, of Preston, taking the silver cup in a competition that would have enhanced the credit of our largest public meetings. In *Grey Dorkings* the classes were very good; but we were sorry to see so many excellent birds of otherwise remarkably fine development suffering from that bane of Dorking fowls, deformed feet. It is well to remind our readers, this disease is almost universally first produced from placing the perches too high from the ground, and it should be always remembered that toes so injured are afterwards rarely curable. There was a grand display of both Buff and Partridge-coloured *Cochins*, and some unusually good White ones. The *Game* fowls were really good, but the classes were less numerously filled than we anticipated, so much so that in one class, the Extra variety of *Game*, there were but two competitors, and no prizes were awarded, as, by rule of the prize schedule, a competition of three pens was necessary. A pen of Black *Game* exhibited in this class were most praiseworthy. The *Hamburgs* were, as expected, first-rate, and the *Polands* were equally good. A sweepstakes for *Bantams* brought a capital competition of forty-two pens, with scarcely a second-rate lot among them; and the Selling Class for both poultry and Pigeons was a thoroughly successful one, and produced many claimants.

As regards the *Pigeons*, Jedburgh has reason to boast of as good a collection as we could ever wish to meet with at any show, each class being numerously and well filled with specimens which the closest scrutiny only tended to improve. The pens for these public favourites were, however, placed too high from the ground for ladies and "little folks" to reap much pleasure from inspection, which we regard as rather a drawback to this most interesting portion of the meeting, though the elevation at which they were placed we believe to be quite unavoidable.

A show of *Japanese* and other *Foreign* Birds concluded the

routine of this excellent meeting, and proved a very enjoyable portion of the Exhibition.

The most anxious care was given by the Committee to every specimen entrusted to them, and, consequently, every bird seemed unusually quiet and comfortable. It is this line of management that invariably insures success. The Jedburgh Show increases annually, and will rank among the principal poultry exhibitions of North Britain.

SPANISH.—Cup, R. Teebay, Fulwood, near Preston. Second, F. R. Pease, Darlington. Third, J. Shorthose, Newcastle. Commended, J. Biggar, Ecclefechan. *Chickens*.—First, W. Meff, Aberdeen. Second, R. Teebay. Third, J. Shorthose. Commended, J. Biggar; G. Taylor, Laverary; H. Crawford, Belth.

DORKING (Coloured).—Cup, F. R. Pease, Darlington. Second, W. Bonthron, jun., Kirkcaldy. Third, W. Amos, Fife. Highly Commended, Lord Binnrig, Kelso. Commended, Countess de Flahault, Kincardine-on-Forth; Mrs. Dickens, Coldstream; John Curror, Edinburgh. *Chickens*.—First, J. Anderson, Meigle. Second, J. Jardine, Ewes. Third, Miss Milne, Kelso. Highly Commended, J. Curror. Commended, Mrs. Dickens; Lord Binning; J. Stocks, Kirkcaldy; Rev. M. H. Graham, Kelso. *Pullets*.—First, W. Cheyne, Selkirk. Second, J. Anderson. Third, F. R. Pease, Darlington. Highly Commended, Mrs. Elliot, Jedburgh; Miss Milne; R. Kerr, Jedburgh. Commended, T. L. Jackson, Dumfries; Lord Binning.

COCHIN-CHINA (Any variety).—First, J. Shorthose, Newcastle. Second, J. Poole, Ulverstone (Buff). Third, J. Biggar, Ecclefechan (White). Commended, W. Arras, Ormiston Mains, Roxburghshire. *Chickens*.—First and Third, J. Poole (Buff and Dark). Second, Miss Milne, Kelso.

BRAHMA POOTRA.—First, Miss H. Scott, Jedburgh. Second, R. Kerr, Mountviot. Third, Miss Roy, Kelso. Highly Commended, Mrs. H. Barclay, Perth. Commended, F. R. Pease, Darlington; J. Shorthose, Newcastle.

GAME (Black or Brown Reds).—Cup, H. M. Julian, Hull. Second, Lord Binning. Third, H. Beldon, Gilstead. Highly Commended, J. Smith, Grantham; W. Boyce, Beverley. Duqualified (hen short), J. Fletcher, Stoneclough, Manchester.

GAME (Duckwing).—First, J. Patterson, Kelso. Second, H. Beldon, Gilstead. Third, J. Gibson, Dalkeith. Highly Commended, J. Anderson, Meigle. Commended, A. M. Macculloch, Barrhead.

GAME (Any variety).—*Chickens*.—First, J. Smith, Grantham (Duckwing). Second, J. M. Grainger, Whitwell, Yorkshire (Brown Red). Third, E. Pickering, Carlisle (Black Red). Commended, H. M. Julian, Hull; J. Anderson, Meigle; H. Beldon, Gilstead.

HAMBURGH (Silver-spangled).—First and Second, H. Beldon, Gilstead. Third, Mrs. Craw, Jedburgh. Commended, J. U. Somner, Jedburgh.

HAMBURGH (Silver-pencilled).—First and Second, H. Beldon. Third, J. Platt, Dean, near Holton.

HAMBURGH (Golden-spangled).—First, H. Beldon, Gilstead. Second, W. K. Duxbury, Leeds. Third, A. Hatley, Selkirk. Highly Commended, J. Muirhead, Haddington; A. Copland, Aberdeen. Commended, C. Anderson, Nenthorn; R. Dickson, Selkirk.

HAMBURGH (Golden-pencilled).—First, W. Cheyne, Selkirk. Second, H. Beldon. Third, J. McInnes, Paisley. Commended, H. Beldon.

BANTAMS (Game).—First, D. Broomfield, Kelso. Second and Third, Miss E. A. Allonby, Gramers. Highly Commended, W. Mabon, jun., Jedburgh. Commended, Mrs. Craw, Jedburgh; F. R. Pease, Darlington; W. J. Routledge, Aberdeen.

BANTAMS (Any other variety).—First, F. R. Pease, Darlington. Second, Countess de Flahault (Japanese). Third, H. Beldon (Black). Highly Commended, J. Anderson, Meigle; F. R. Pease, Darlington; F. L. Roy, Nenthorn (Silver-laced Sebright).

GREY (Grey and Mottled or White).—First, S. Swan, Bush. Second, F. R. Pease, Darlington. Third, Mrs. Elliot, Hyndhope. Highly Commended, T. E. Boog, Tythehouse. Commended, Mrs. Craw, Jedburgh.

DUCKS (White Aylesbury).—First and Second, J. Smith, Grantham. Third, J. A. S. E. Fair, Gilliestongue, Highly Commended, S. Swan; H. Beldon. Commended, Lord Binning; W. Hood, Jedburgh; J. A. S. E. Fair.

DUCKS (Rouen).—First, W. Hood. Second, Mrs. Elliot, Hyndhope. Third, J. Menzies, Kincardine-on-Forth. Commended, J. Patterson, Kelso.

DUCKS (Any other Distinct Breed).—First, J. Jennison, Manchester (Carolina). Second, T. Elliot, Hyndhope (Wild). Third, J. B. Jenson, Hull (East Indian). Highly Commended, H. Beldon, Gilstead; J. Jennison (Wiggon). Commended, Countess de Flahault (Black East Indian).

TURKEYS (Any variety).—First, J. Smith, Grantham (Cambridge). Second and Third, F. R. Pease, Darlington. *Poult.*—First and Third, J. Smith (Cambridge). Second, F. R. Pease. Highly Commended, T. C. Harrison, Hull (Cambridge); F. R. Pease.

ANY OTHER VARIETY.—First and Second, H. Beldon (Polands). Third, J. A. S. E. Fair, Gilliestongue (White Dorkings). Highly Commended, J. R. Jessop, Hull (Black Polish); F. R. Pease (Polish); J. A. S. E. Fair (White Dorkings); Countess de Flahault (Black Poland); W. K. Duxbury, Leeds (Black Hamburgs).

SINGLE COCK.—Spanish.—First, J. Shorthose, Newcastle-on-Tyne. Second, E. Brown, Sheffield. Third, H. Beldon. Highly Commended, J. Biggar, Ecclefechan. Commended, J. Lunn, Jedburgh. *Dorking*.—First, Countess de Flahault. Second, Mrs. Elliot, Hyndhope. Third, J. Menzies, Kincardine-on-Forth. Highly Commended, G. Douglas, Hyndhope. Commended, J. A. S. E. Fair; T. Y. Craig, Gallatown. *Cochin-China*.—First, E. J. Charters, Kelso. Second, T. Y. Craig. Third, J. Shorthose. Highly Commended, Mrs. Dickens, Coldstream. *Game (Any variety)*.—First, J. Smith, Grantham. Second, W. Easton, Jedburgh. Third, J. M. Grainger, Whitwell, Yorkshire. Commended, Miss Milne, Kelso; J. Anderson, Meigle.

Hamburg (Any variety).—First, H. Beldon. Second, C. A. Lockhart, Kirkcaldy (Golden-pencilled). Third, H. Beldon. Highly Commended, Mrs. Craw, Jedburgh; F. L. Roy, Nenthorn (Silver-spangled); C. M. Roy, Greenhill. Commended, Mrs. Craw; Miss H. Scott (Golden-spangled); F. L. Roy (Silver-spangled); Mrs. Blackie, Jedburgh (Silver-spangled). The SILVER CUP, given to the most successful Exhibitor in the preceding classes, was gained by H. Beldon, Gilstead.

SWEEPSTAKES FOR BANTAMS.—First, (J. J. Harvey, Jedburgh (Duckwing). Second, F. R. Pease, Darlington (Cochin Bantams). Third, Miss Haggan, Jedburgh (Black Red Game). Highly Commended, W. Mabon, jun., Jedburgh.

While claiming to have devised a system of bee culture substantially the same with that of Dzierzon, before I had any knowledge of his valuable labours, I have in all the editions of my work on "The Hive and Honey Bee," cheerfully acknowledged my obligations to him for much valuable information, more especially for the flood of light which by his discovery of parthenogenesis, he has thrown upon the whole physiology and management of the honey bee.

My appreciation of the merits of your Journal, and its extensive circulation among bee-keepers, must be my apology for requesting you to occupy so much of your space with matters personal to myself. It would afford me great pleasure to be numbered hereafter among the contributors to your apiarian department.—L. L. LANGSTROTH, *Oxford, Ohio.*

[We can at once answer for "A DEVONSHIRE BEE-KEEPER," that he will most readily correct any error he may have fallen into, and still more readily in the case of a brother apiarian so favourably known. We are more than pleased to include Mr. Langstroth among our list of contributors.—Eds.]

A NEW CHAPTER IN THE NATURAL HISTORY OF THE BEE.

BEE COMMOTIONS AND QUEEN ENCASEMENTS.

(Continued from page 62.)

In accordance with the concluding paragraph in my last article, I shall now proceed to lay before the apiarian readers of this Journal my present views, as evolved from much experience of the curious phenomena, which I have designated Bee Commotions and Queen Encaselements. It will be seen that during my investigations, my views varied with the varying character of the cases coming under my notice, and that I was compelled to abandon the adoption of any uniform rule or principle as applicable to a solution of all of them. I shall, perhaps, partly be anticipated, therefore, when I now state what these views are, and the conclusions at which I have ultimately arrived. I am of opinion—

1st. That queens may be encased or imprisoned by reason of the entrance of stranger bees into a hive.

2nd. That queens may be encased or imprisoned when superannuated and infirm through age, or from any natural defect in their procreative powers—such as exhausted fertility; and

3rd. That young queens may be encased or imprisoned when unfecundated beyond a certain age, and when in an abnormal condition.

I shall illustrate the proofs of each of these headings by one or two experiments selected out of many.

First, then, queens may be encased or imprisoned by reason of the entrance of stranger bees into a hive.

In my article entitled "Experimental Apiary" (peace to its memory!), it was not without reason, that among other things therein referred to, I emphatically condemned the shifting or transposition of hives. Many years ago, as an experiment, I transposed several hives all at one time in the spring, in order that weaker ones might be strengthened at the expense of the stronger. The result was queen encaselements and massacres. If any one has never seen a queen encasement, he has nothing to do but to transpose a couple of hives, and in all likelihood he will witness this curious phenomenon in one of its simpler phases at least, and, perhaps, the death of a queen to boot.

But I had frequently suspected, as before hinted, that the entrance of stranger bees into a hive through whatever cause, often led to the encasement of the queen, and consequent commotion. Indeed, I could not account on any other principle for the phenomena exhibited in some of my hives. I shall narrate a case or two in point, which took place in my apiary no farther back than the month of August last.

It will be remembered that in the middle of that month the weather became intensely hot and oppressive. The thermometer marked more than an ordinary temperature and the consequence was, that the bees of most hives lay out in masses. On returning after a short absence from home, I regretted to find that the massive combs of a unicomb-hive

the heat, killing and crushing one-half of the entire population. I removed the unicomb, shut up the entrance, and allowed the surviving bees to find access into whichever hive they choose. They entered an adjacent young Ligurian. In half an hour afterwards commotion commenced in this hive, and on listening at the entrance I heard the invariable fluttering sounds so long familiar to me, as the sure indication of the queen being encased. The queen of this hive I greatly valued in consequence of the brilliance of her colour, and I immediately took steps to rescue her from her very equivocal position. Unfortunately the hive was a straw one, but in ten minutes or so I had all the bees driven out into an empty skep and removed a dozen yards off. I released the queen, but so terribly affrighted was she of her adversaries, that heavily fertile though she was, she took flight and returned to the old stance in the bee-house where I secured her. I returned her to the driven bees, but she was again seized by some of them, and in my endeavouring to rescue her from her persecutors, she for the second time took flight and returned to her old locality. I then seized and kept her in custody for a little time until I considered what best to do in the circumstances. I now thought of separating the unicomb's bees from the Ligurian hive's bees before proceeding further. For this purpose I replaced the Ligurian hive in its old site, and also opened-up the entry to the unicomb-stance, putting an empty hive there. I then allowed the conjoined driven bees to quit the skep into which they had been put at a little distance, and thus each hive's bees gradually betook themselves to their own stances, and I got quit of the unicomb's bees. The captive queen I now introduced to her disconsolate subjects, by which she was received with a perfect hurricane of rejoicing. There was none the worse of all this rough usage. Here, then, there could be no mistake in this case as to the true cause and origin of the encasement of the queen and consequent commotion—namely, the entry of stranger bees, which though admitted themselves without demur, had, nevertheless, surrounded and imprisoned the queen. One other instance on this head will suffice.

On the 30th of October, 1863, I dislodged a young Ligurian queen, artificially reared from a thinly populated hive, with the view of putting her at the head of a hive of black bees. This I successfully accomplished, having first taken away the black queen and about two thousand of her bees. The Ligurian queen was, as usual in such cases, surrounded and imprisoned by the black bees, and she did not regain her liberty till the evening of the 31st, or thirty-six hours after the experiment. With the two thousand black bees and queen I joined a number of the Ligurian bees, and here again the black queen was surrounded and imprisoned for a period of nearly equal duration, though in neither case any fatality occurred.

Second. Queens may be encased or imprisoned when superannuated and infirm from age, or from a natural defect in their procreating powers—such as exhausted fertility.

In 1861, I happened to have in my apiary four hives, Nos. 1, 5, 9, and 13, having very aged queens. No. 1 queen was reared in 1857, No. 5 in 1858, No. 9 in 1857, and No. 13 in 1856. This latter queen was the oldest I ever had in my possession. A few words regarding each.

On the 21st of May, 1861, I removed the queen of No. 1 hive, a Huber, as she was becoming very unprolific and languid in her movements. The brood was scanty and no drone eggs had yet been laid. The withdrawal of the queen produced almost no perceptible change in the hive. There was no commotion of any kind. This induced me to examine the hive minutely, which I did next day, and I found that the decaying energy of the queen had not been unobserved by the bees, but was anticipated as well by them as myself, as two royal cells containing larvae were well advanced. These were sealed on the morning of the 25th, and a young princess emerged during the night of the 31st. This is another beautiful instance of the wonderful instinct and foresight in the bee in providing against an impending calamity, the probable speedy decease of their decaying queen. So much for No. 1. Now for No. 9, straw hive.

On the 11th of March, 1861, I noticed symptoms of No. 9 hive having its queen encased. On turning it up I found between two of the centre combs near the bottom, a cluster of bees which were densely wedged together. Conjecturing

When the queen was in the midst, I took a small twig and disengaged the bees and found the queen—a very large and powerful one, on liberating her she ascended the comb surrounded by bees, and immediately commenced all the afternoon. This queen was nearly two years old. On March 23d, I again found the live in great numbers. On moving it up the bees were all assembled throughout the hive searching in all directions, but no answer was observed. I drove the live to ascertain the true condition, but found as appearances indicated that there was now no queen. She had disappeared since the first examination in the fall. I then found the bees in another hive.

I would now particularly draw the attention of the scientific community to the names of Nemes and his associates as contributors to the phenomena now under consideration being investigated, some and not less mysterious and violent phenomena presented themselves—viz. those of aged but healthy female persons becoming brain-ravaging persons only. The very interesting nature of these phenomena will I hope, induce my giving some additional details, and otherwise necessary, about my present subject, but the two phenomena in question are so extremely hard to investigate, that I only reluctantly begin thinking to do so. I shall, however, in subsequent details as it so be possible.

In the end of November 1960, I missed the first session of the Executive No. 1. In March 20th 1961, I again attended another symposium concerning the life which was then almost going wrong and minority appellations were suspicious. In listening I heard the usual statements about influence of the queen being suspected. I immediately estimated the life of this minority with glass sides and found a number of bees the size of an apple, some the size of the queen. I was surprised by a twig in the middle of the bees which were remarkably singing together. I might have tried the winter during the found life & then it was not winter regarding the bees. Other visitors collected around during my manipulations and the queen escaped me. The winter suspended and all moved up wings during the months and queen was restored. I estimated this life again in the fall and found the bees still very suspicious and all going out in appearance of young bees. There was little larva around and the bees were disposed to work the queen. 1961 was now nearly five years old.

"Hiding in her new skin, a live white female emerged. I immediately presented a bottle of water to her. But through the new membrane and she was in fact, she was afterwards seen not during the evening meal. In the light of light, I observed two or three small insects having themselves. I said that they say I always look upon with an invariable eye. In the end of May seeing that no young were produced and that the water appearance of the new membrane that the young must be in an abnormal condition. I wrote the bees to hasten the change of metamorphosis and development. I failed however to secure the result. Several of the male specimens I saw at every hour, but could not find her. I then removed all the males and a female live. In examining these, and a single white egg at young bee could be seen. In this time period, I continued seven minutes in all stages in a normal white cells, and in several of the cells two or three eggs were found separated. The operation having been performed in the evening, I left the hive in a very excited state. Next morning they still remained so. I now examined the spot where I had examined the female and found the queen apparently gone dead. She had fallen motionlessly and immovably, and had been exposed in the cold ground during a miserable frosty night. I succeeded in finally persuading her to continue, but this was all. I then gave her to the bees, the best specimens. They gathered around her and tapped their wings with joy. They tried to feed her, but she was all too motionless. I left her in their care, and in the afternoon, on examining the entrance I found the queen completely revived and entering the workers' bodies. This is a singular change, among insects which might be given, if the quantity of life in the queen bee, and her capability of enduring such a degree of cold so long without consuming the vital energy is improving under any of her tortures. The day following she began again to fly and in the heat of May several of these hatched eggs were laid. She was evidently a very good queen, but however

wings with an abdomen exceedingly thin. I again examined the combs in the hive and found the queen still laying apparently fresh eggs all in regular rows. As the bees were now reduced to about seven hundred in all and no new females maturing could I took the queen away and having drawn up a frame I introduced a new female queen to a portion of the bees to see if they would accept her. In ordinary circumstances I know what the consequences were likely to be, but I wished to ascertain if the bees in their peculiar circumstances might not receive her. I was glad to find the bees made no attack upon her, but appeared rather to treat her kindly. Nourishing her I covered the frame in half an hour and then examined it and found the queen engaged in the making of a cluster of bees. In examining her I found she was much worn and sailing heavily under the effects of dismemberment and stings. I immediately saw a bee sting her underneath the body and she died soon afterwards and was removed. I then treated them with a piece of bread-crust containing eggs and young larvae, but they failed to eat a queen, and I ultimately placed the residuary bees in a neighbouring hive.—Doyle.

7. IN FACTURE.

STAFFING THE STUDY

YOUR Representative nevertheless seems to think that my words have been here being indignantly rebuffed so that would not have constituted an indignity with the speaker because to everything I will freely make the source known and shall feel obliged for any information which will enable me to do so a better justice to the cause.

In 1964, out of six stocks there were six hundred and thirty one. It is a seasonal stream in May 1964 and is located in a legend "without drainage". In 1968 it was six hundred and thirty one. It was very high in a spring and in the spring of 1968, when I was from home, and out a very large stream which would have been returned but for my absence. However it made a very heavy live before the end of July.

Early in May 1944, the first I was signed with a line furnished with this last grade and 11 inches square inside by 11 inches deep, and the beam in some material and unimpaired specimens. When the sign was two-thirds filled a square frame without sides top or bottom was slipped in between the stock bars and sign and when the line became involved a second frame exactly like the first — 11 inches deep by 11 inches square inside — was introduced in between the first frame and the stock

In spite of the large amount of money thus offered, assisted by the money of the late Mrs. J. W. Smith, in the form of cash, but after negotiating the same, I returned the same to the parent lot, and when paying commenced raised all the other bids, leaving the same highest in the hands of the bidder. The same bidder finally paid the bid but with the money and carried their goods down to the market place, but the same price of money did not exceed \$100.

"I was a second swarm about May 25th, 1968. It is a Swiss cheese type, 10 colonies square, by colonies deep, containing eight cells. This swarm was in the first place later merged in the state of testing the quality of the queen. Bees did so wonderfully well through July & very small swarms did only during the time with north and working in a bee-glass, but later becoming a main towards the end of July. That I know of is a second type.

This was signered with a box of the same size as the sugar box. But the bees were very slow in taking possession of the sugar afforded to them, and shortly after taking possession of the sugar started to swarm. In this case the queen was a valuable one, so having caused the royal team, I returned the swarm with the old queen two shallow boxes were successsfully introduced between the sugar and sugar and towards the middle of July the hive was also introduced as the bees were getting short of room, though they had not quite filled the sugar. This hive yielded about 4 lbs. of pure honey.

1. The second flight of 1962 was also a success. It was a 100% success rate. The flight was successful in that it was a 100% success rate. The flight was successful in that it was a 100% success rate.

DEVONSHIRE BEE-KEEPER, who can attest its strength. It was hived on the 23rd of May, and had given me 9 lbs. of honey before it left my apiary. The fourth swarm has been already alluded to. The queen at the head of this hive (c) in 1864, did not prove very prolific. The hive was supered, and afforded 30 lbs. of very pure honey.

In conclusion, I may observe that Dzierson affirms that the produce of a divided hive will greatly exceed that of one which is not permitted to swarm, and my own experience induces me to concur in this opinion, especially if the swarms are early, so that the progeny of the young queens are able to assist in collecting the honey harvest in the latter part of June, and beginning of July. If a stock is late in swarming, the young bees would for the most part be too late for the harvest, and such a stock might give a better result if storified. I never permit any of my hives to hang out at the entrance for more than one day, as I can always find a more profitable occupation for them.—J. E. B., *Wolverhampton*.

REMOVING BEES TO A DISTANCE.

If you will kindly advise me how to transport one of Gale's (of Alton) box-hives, with the bees and honey to a distant county, I shall be much obliged.—C. E.

[Stop all apertures in the top or sides of the box by means of perforated zinc, then raise it from its floor-board, invert it, and confine the bees by tacking a piece of perforated zinc over the bottom of the hive. Pass a cord round it, and send it, still in an inverted position, in charge of a careful messenger, who will not commit it to the tender mercies of railway porters.]

DIMINUTION OF WEIGHT IN BEE-HIVES DURING OCTOBER AND NOVEMBER.

THE following is the loss in twenty stocks that were weighed on the last day in each month:—

Loss in Ounces.				Loss in Ounces.			
No.	October.	November.	Total.	No.	October.	November.	Total.
1	30	22	52	11	38	41	79
2	24	82	56	12	35	36	71
3	33	89	72	13	28	24	47
4	31	17	48	14	32	43	75
5	33	27	60	15	37	24	61
6	32	31	63	16	28	36	64
7	18	15	33	17	38	24	57
8	34	29	63	18	40	39	79
9	33	27	60	19	44	32	76
10	30	27	57	20	32	40	72
Total consumption, or loss, of twenty stocks				640	605	1245	
Averaging per stock				32.0	30.25	62.25	
The mean average loss per stock for the last ten years				40.78	25.95	66.71	

This shows that the consumption in October was 8½ ounces per stock less than the average of the last ten years; but in November the loss was about 4½ ounces per stock more than the average. My bees were out almost daily in October, and were collecting from borage, mignonette, and French poppies, and in November they were out frequently, and I saw them carrying pollen into the hives as late as the 21st of November.—WILLIAM CARR, *Newton Heath, near Manchester*.

LIGURIAN BEES IN AUSTRALIA.

THE apiarian readers of THE JOURNAL OF HORTICULTURE will be pleased to learn, on the authority of Mr. Edward Wilson, President of the Victoria Acclimatisation Society, who has recently revisited this country, that the Italian stocks exported from my apiary to Australia in 1862, are doing remarkably well, and have multiplied prodigiously in a climate which appears to be most favourable to them.—1 DEVONSHIRE BEE-KEEPER.

RANCIDITY IN BUTTER.

I WOULD suggest to your correspondent "COCHIN" to churn each cow's milk separately, by which means he will be able to determine if the rancidity arises from any one

complaint in either of the animals, for a cow suffering from such a complaint would cause the butter to be rancid. Dry salt instead of brine will cause rancidity sometimes. A hot hand making up the butter will also cause it. Skimming too often, and mixing the cream altogether, is a cause. Meat hung up in a dairy, whether fresh or salt, would also cause it; and lastly, if the dairy is near a stable in which horses are kept, the smell from the ammonia will invariably cause rancidity.

I hope "COCHIN" will succeed in finding a remedy, and make it known in your Journal for the benefit of your readers generally.—JAS. NOON.

OUR LETTER BOX.

PIGEONS FORSAKING THEIR HOUSE (*An Irish Subscriber*).—This, I fear, arises from something objectionable in the entrance. Are they there disturbed by cats, or does the ivy so cover the roof and alighting-board as to make their settling thereon inconvenient? Pigeons do not like resting among leaves, not being arboreal in habits; or are the birds of a wild sort, and consequently disapprove of the place as being too public? In that case you might try a more tame variety, and when they are confined let the entrance be so guarded that they can go out and see about them, so as to learn by eyesight the exact position of the way in.—B. F. B.

ORNAMENTAL HEN-COOP.—"F. P." would be obliged by the suggestion of an ornamental hen-coop. If any drawings which we approve are sent to us in answer to this appeal, we will have them engraved.

HATCHING APPARATUS (*Q. C. H.*).—Write to Mr. Melville, 30, Glaukin Road, South Hackney, London. He is Mr. Geyelin's agent.

SUPERIOR EGG-LAYING FOWLS (*C. S. J.*).—Spaniards are excellent layers, but not better than the Crève Cœur or La Flèche. They are hardier. The Hamburgs are great layers, but none of these sit. As we do not advocate crosses, and as such must be the result of mixing several breeds together, we should advise you to keep Brahma Pootras. The advantage will be, that they are not only vast layers, but they are excellent sitters and mothers. If you have several places, you may have several breeds, and then we recommend the three first named.

SIZE OF POULTRY-HOUSE (*Idem*).—A wooden house is all that is necessary for any poultry. If you keep fowls by hundreds, you should have several houses. There are few places in the country that are not already provided with them. Old cow-stalls, calf-pens, barns, cart-houses, wood-houses, lean-to's, anything will do. To roost a hundred and keep them healthy, you want 30 feet by 25.

POLAND FOWLS (*Old Subscriber*).—The Golden and Silver Polands are the hardest of the breed, and capital layers.

LARGE SUPPLY OF EGGS (*F. C.*).—You will want 7000 hens, besides cocks, of different ages, in order to insure a succession of 1500 eggs daily. They will cost at the lowest estimate £1500. They would require at least eighty acres of land to be kept healthy and profitably. Four men would look after them, but they could only do it by having everything necessary brought to their hands. They must have nothing to fetch, or grind, or thrash. All their time will be occupied in tending and feeding. Any poor land will do, and it will be better in every way for your pursuit than good land. Pens and sheds cannot be too homely, and need not entail any great expense. We do not advise you to take such a contract without first assuring yourself of efficient and certain help in the event of your plans falling. A much safer and more reasonable agreement would be to undertake to sell all your eggs at a certain price to one person all the year round. In such a contract as you speak of, inclement weather—such as snow, cold easterly winds, or the appearance of an epidemic among your birds would be very serious to you.

SCURF ON LEGS OF COCHIN-CHINA FOWL (*E. J. W.*).—The scurf is not important if it has not eaten off the feathering. Put only one cock to the two hens, you will have to remove him later in the season. Two cocks would be not only ridiculous but mischievous.

BAKERS (*F. G. R.*).—They are also called "Creepers." The following is the description given of this breed in the "Poultry Book for the Many":—"They resemble the Dorkings in everything but extreme shortness of legs; these are only 2 inches long from the hock to the heel; comb single; body round, plump; tail ample, and in the cocks well sickled; plumage white, variously marked with black; eggs average size; hens good layers and good sitters. Weight of cock averaging 6½ lbs.; of hen, 5½ lbs. They seem to be of Scotch origin, and are described by a good judge as 'hardy, a good variety, and well adapted for the table.'"

LONDON MARKETS.—JANUARY 23.

POULTRY.

The supply is small, and trade dull. There will be little alteration till the meeting of Parliament. The enormous supply of Pheasants has had much to do in depreciating the price of fowls; and so far as these luxuries can be considered as public and ordinary food, we may say they have this year been within reach of many who have not before ventured to think of them.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	3	0	3	6	Partridges	1	9	2	6
Smaller do.	2	6	3	0	Hares	2	3	2	6
Chickens	1	9	2	0	Rabbits	1	4	1	6
Geese	7	0	7	6	Wild do.	0	9	0	10
Pheasants	3	0	2	6	Pigeons	0	10	1	1

WEEKLY CALENDAR.

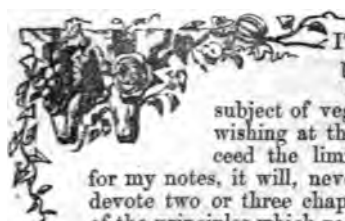
Day of Month	Day of Week	JAN. 31—FEB. 6, 1865.	Average Temperature near London.			Rain in last 38 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
31	Tu	Hilary Term ends.	44.4	30.5	37.4	17	42 af 7	45 af 4	18 9	42 10	4	13 48	31
1	W	Harebell Rush flowers.	43.3	31.0	37.2	12	41 7	47 4	48 9	58 11	5	13 56	32
2	Th	CANDLEMAS DAY.	43.7	31.0	37.4	13	39 7	49 4	17 10	morn.	6	14 2	33
3	F	Spurge Laurel flowers.	44.3	30.9	37.6	17	38 7	51 4	53 10	13 1	7	14 9	34
4	S	Elder foliates.	44.8	33.2	39.0	18	36 7	53 4	55 11	22 2	8	14 15	35
5	SUN	5 SUNDAY AFTER EPIPHANY.	45.8	33.7	39.8	17	34 7	54 4	after.	24 3	9	14 23	36
6	M	Dr. Priestley died, 1804, aged 61.	46.3	32.7	39.5	19	33 7	56 4	15 1	18 4	10	14 24	37

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 44.9°, and its night temperature 31.9°. The greatest heat was 57° on the 3rd, 1850; and the lowest cold, 8°, on the 31st, 1837. The greatest fall of rain was 0.75 inch.

THE MODERN PEACH-PRUNER.

No. 2.

THEORY OF VEGETATION.



WITHOUT having the pretension to enter very largely into the difficult subject of vegetable physiology, and wishing at the same time not to exceed the limits originally proposed for my notes, it will, nevertheless, be proper to devote two or three chapters to an examination of the principles which regulate vegetation.

In this case theory must necessarily precede and govern practice, nor is it prudent for the horticulturist at any time to separate them.

It is not always at first setting out that the amateur, eager as he may be for information, is in a position to profit by the numerous works on the principles of vegetation. From many causes he generally reverses the natural order of things, and begins by experiments based on the teaching of unlearned and often deeply prejudiced men. The consequence is, that after a series of years passed in alternate success and failure, he finds himself compelled to return to first principles, and to make an attempt, often futile, to unlearn nearly all he formerly knew; and this often occurs when his practical manipulation had attained a pitch which, had it been regulated by a sound acquaintance with the laws of vegetation, would have placed him in the highest rank. It is obvious, then, that a treatise on Peach pruning, such as this one, must commence at the beginning. It shall be the especial object of the writer to make this portion of the subject as brief and as simple in detail as possible, while nothing that is important to the amateur will be omitted.

Commencing by an analysis of the organs of plants we find that in general what are designated as the elementary organs, or the primitive formations of matter, are known as cellular and vascular tissues. The cellular tissue appears first, and is composed of small cells, while vascular tissue is composed of tubes, pierced with lateral openings, and enclosing the original cellular tissue between them. Cellular tissue forms the softer portions of plants, and vascular the harder portions.

Roots are composed of the neck or collar, of the tap-root from which the roots ramify, and of fibrous rootlets, at the extremities of which are the spongioles, which from the soil absorb the nourishment of the tree. The spongioles, as seen under a microscope, are composed of cellular tissue, and are of the greatest importance to the life of the tree.

The trunk of the tree is composed of the pith, the ligneous body, and the bark. The pith is formed of cellular tissue bound together by the tubes of the vascular tissue. In this position these tubes act as vessels of the medullary canal. From the natural deviation of these vessels arise the leaves and the buds,

and after these the green or growing shoot. The ligneous body lies between the pith and the bark. If we cut through the trunk transversely, the ligneous body is seen in the form of concentric layers, each the growth of one year. Between these layers are the medullary rays which connect the medullary canal with the circumference. If, however, the trunk be cut through vertically, the ligneous fibres of the layers are seen to be formed by the union of vessels derived from the base of the leaves, and reaching downwards to the spongioles. The ligneous fibres, produced by the upper leaves, lie over those produced by the lower leaves. Thus the exterior layers are the latest deposited and the youngest.

The ligneous body itself is composed of hard wood or heart, and of alburnum or soft wood. The heart, formed of the innermost layers, is composed of tissue, which material deposits have completely filled up. The alburnum, or recently-formed ligneous substance, is situated between the heart and the bark of the tree. The outer layers contain the sap-vessels, which perform their important functions in proportion to their formation.

The bark comprehends the liber and the cortical layers. The liber is the interior portion of the bark, and covers the alburnum. The liber is the seat of vitality in the tree. It is composed, therefore, of a certain number of thin layers of vessels having their origin at the base of a leaf, and their extremity at the spongioles. While, however, in the ligneous body the exterior layers are the latest produced, in the liber, on the contrary, the newest are the innermost ones. The cortical layers are those formed by the oldest ones of the liber. In young subjects the liber is covered with thin tissues called respectively inner and outer epidermis.

The bud, situated at the axil of the leaves, is the rudiment of the young shoot. It is formed by a deviation of the vessels of the medullary canal.

Leaves are composed of footstalks and the blade or body of the leaf. The footstalk of the leaf is formed by the vessels of the medullary canal. These vessels ramify in the tissue, and form the channels of the sap. The body of the leaf is formed of cellular tissue covered with a thin skin or epidermis, which is pierced with innumerable apertures called stomata. In fact these stomata or mouths are to be found on all growing portions of vegetables, not only on the leaves, as before stated, but also on the shoots themselves, and on the fruit. Their functions are very important in vegetable life, as will be explained presently.

Flowers are composed of floral envelopes and of sexual organs. The floral envelopes are the calyx and the corolla. The divisions of the calyx are known as sepals, and those of the corolla as petals. The sexual organs are the stamens and the pistil. The stamens are the male organs of plants. The anther at the extremity of the stamen contains the pollen or fertilising dust. The pistil is the female organ of plants, the extremity of which is called the stigma, and the base the ovary, while the intermediate space is called the style.

The fruit is composed of the pericarp, a fleshy sub-

stance which is formed of cellular tissue, and of the seeds. The seed contains the rudiment of a similar plant.

The embryo comprehends the radicle or rudiment of the root, the plumule or rudiment of the stem, and cotyledons, whose office it is to supply nourishment to the young plant before the appearance of the leaves.—T. COLLINGS BRÉHAUT, *Richmond House, Guernsey.*

HARDY FERNS:

HOW I COLLECTED AND CULTIVATED THEM.—No. 2.

IN writing my experiences of Fern hunting in Cornwall, my pen has a lingering habit, and my thoughts wander away from the Ferns to the people with whom I was thrown into pleasant association during my Cornish visit, and upon whose characters and habits of life, Mr. Aitken's influence was telling perceptibly, telling upon rich and poor in a manner that made itself felt by every visitor to Penzance.

The man who drove the donkey-chair, the miner who showed us short cuts over terrible precipices, each had some tale to tell of wonderful conversions made with noise and clamour, in which it seemed to me, that the worse the "ground," the better the "seed sown" was supposed to thrive. What I heard did not seem to fit in with my knowledge of the usual workings of the "Good Power" in the natural world around me. I remembered the *Lanceolatum* dwindling away on the barren wall, and I asked what sort of lives followed upon these noisy conversions? The answer was as I expected—a dwindling away afterwards. Yet not in all characters was this reaction to be observed. Upon some Mr. Aitken's strange power for influence fell with the highest results for good—stirring up the slothful, deepening the seriousness of the already serious, and giving to the naturally timid a moral courage, unlike the courage of this world—it was the influence that a mind really in earnest (whether for good or evil), must ever have upon the minds of those around him.

As the memory of these days comes back to me, a bright light seems to fall on the fragile Maiden-hair Fern, so graceful in form, so tender and delicate in growth. Hiding itself away from the glare of the sun, and the haunts of men, in its own home—the home of Heaven's choice—how green and lovely it is! adorning the rough crevices of the time-worn rock, and in its sheltered nook, even in the depth of winter, ringing out to Nature's God its little psalm of praise, as a stray wind blows on the tiny pinnules. Transplanted, the delicate fronds shiver in every breeze, and perish when the cold wind of heaven touches them.

Adiantum capillus-Veneris, is another of my representative Ferns.

Fragile and delicate as the Fern was the young friend who first introduced me to its haunts on the rocky banks between Lelant and St. Ives, in a wondrous walk, where every beauty of earth and sea and sky seem blended together in harmony. As we walked and talked, rabbits came out of their burrows, peered at us, and then scudded away amidst the Gorse. I had never seen *A. capillus-Veneris* in perfect growth in England, and none but one to whom its fastnesses were well known would have found it on this day. I was cautiously descending a very slippery bank on the verge of a sharp descent to the sea, whose waters were murmuring below, when I heard a joyous cry—"Look up!" and there I saw the Maiden-hair, not one plant but many, peeping out of moss dripping with trickling water, and nestling into the crevices of the rock. Some of the plants were tender wee things; but I think these answered best in cultivation, for out of this morning's raid I have had about twenty beautiful Ferns, besides those that my friend took away. I can recall the very scene, the dark eyes of my friend, out of which the pure light of a chastened soul gleamed, brightening with delight at the discovered treasure, the eager step, the radiant, and then the paling cheek. I see it all as I look at my Ferns, and remember that that ardent spirit is at rest for evermore; safe in that blessed home towards which he had from his earliest years been talking, side by side, as it seemed to those who knew his quiet, holy life, with Him whose love constrained him to a life of self-denial and self-devotedness, to the spiritual warfare which surrounded him. His highest ambition was to be

old enough, to be a missionary priest, to spend all his talents and his life in his Saviour's service. Ere that longed-for day of toil dawned, rest was given, and the earnest choice of the heart, and the fixed will of the mind, was, we may humbly trust, taken for the working of a body too frail to fulfil its longings, by that "Only Master, who in service takes the will for the deed."

In our uphill scramble to regain the path to St. Ives, we met a man who looked at us with very displeased eyes. "Where had we found the Fern?" Then he invited us to his cottage, and showed us, oh! so very many imprisoned Maiden-hairs, languishing in captivity, which he had sought for and planted to sell to stray tourists; so that shortly every plant must be gone.

St. Ives is one of the most picturesque towns in England. The grey houses jut out on a tongue of land into the sea, which chafes around and upon them, quite ready, in appearance at least, to swallow them up, as it swallowed the land of Lyonesse long ago. I found no other rare Fern at Lelant or St. Ives, but there are many curious wild plants, and the churches are well worth a visit, particularly that of Lelant.

I planted the specimens of *A. capillus-Veneris* in pots half full of drainage, with peat earth, and a little silver sand. They thrive well in cultivation, but they must be housed during winter in the north of England. In Devonshire I have succeeded in making them live in the rockery all the year. A short distance from Nice, in France, there is a grotto, called the grotto of St. André, the whole roof of which is a mass of *capillus-Veneris*. I drove there one Christmas Eve. The portals of the cave were bright with flowers and Myrtles, and the inside was like fairyland, from the waving of the beautiful tresses, as they hung from the dripping roof high above our heads. I took a hint from the cave, and keep my Maiden-hair thoroughly drained, and constantly watered over the fronds, and I have seldom seen finer plants than the Warwickshire ones.

I have not mentioned any particular haunts of *Lastrea recurva*, for it grows plentifully everywhere; the well-drained banks of old ditches seem to suit it best. One of the very prettiest *Adiantums*, a foreign one, for a rockery, is the *Pedatum*. It is exceedingly hardy, increasing rapidly, and the tuft of bright pinnae attached to the shining black stalk spreads out in shape like an inverted umbrella, making the entire mass like a diminutive Palm grove.

Another good hardy Fern is the *Cyrtomium falcatum*. This Fern has the dark shining look of the Holly, and preserves its brightness when the other inhabitants of the fernery are lying dead around. It is a native of South America. In a small hamper of Ferns lately sent to me from Otago, in New Zealand, I discern the early promise of *C. falcatum*, but as I have not had the opportunity of studying the native Ferns of Otago, I cannot be very positive about it, and I shall not venture it out of doors till I learn its inclination more fully. The fructification of the *Cyrtomium* is exceedingly curious. The shape of the frond resembles a leaf of the *Berberis aquifolium*, and the back of each pinnule is dotted over with round spore-cases in the neatest manner imaginable.

There is a great deal of pleasure in tending the foreigners of a fernery, particularly when they benignly adapt themselves to our miserable climate. Torn from the glories of a tropical forest, where their kindred tower their giant forms towards Heaven, do they never pine for home? Does the *Cyrtomium* never long to change the twittering sparrow and sober robin, for the gay chatter of the parrot, or the wisdom of the statesman-like macaw? Does it miss the light spring of the agouti, the merry race of the raccoon? Does it hold out its arms in vain for the embrace of the trailing parasite, decked in a thousand gorgeous hues? Does it sigh for the glow of the noontide sun, as its rays penetrate here and there the thick shade of the forest, lighting up the bright insect world that lies in drowsy ease around? For my pleasure it is content to forego all its grand, happy past, and live in the quiet fernery, alone and forgotten by all but the grateful hand that supplies its wants, remembering it is a stranger in a strange, uncongenial land.

Another foreigner that is very easily cultivated, and very lovely, is the *Polystichum proliferum*, the fronds are so

finely cut that it has the appearance of lacework. It increases rapidly, a number of small plants collecting round the old root, which when planted out soon grow.

There are many other foreign Ferns that look exceedingly handsome in a fernery, but I have only cultivated those I have named. I am hoping to find several of the Otago Ferns hardy enough to brave a Devonshire winter; but I shall not venture them out till I have proved them more surely.

I have never in my wanderings found either the *Woodsia ilvensis* or *hyperborea*. I have heard of them in Scotland, and again at the Lakes, but I am obliged to confess that I have met with neither of the plants either in its wild or cultivated state, so that I have been unable to buy one from any collection I have been over. I believe they are too rare and uncertain in growth to be trusted out of doors, even during the summer.

Another Fern I have never found is the *Asplenium fontanum*. I have had several plants of this which I have tried to harden sufficiently to trust in the fernery, but they are, at best, unhappy-looking, and the slugs devour the little juicy fronds, which are about 2 inches long, and in appearance like the young fronds of *Asplenium lanceolatum*. In a cool greenhouse *fontanum* grows well, throwing up a compact cluster of rather pale green fronds. I plant it in a pot half full of drainage, and leave a few bits of broken flower-pot amongst the soil in which I plant it. I venture one plant out in the summer, as I like to see at a glance all my specimens gathered together. A well-stocked fernery, and "Moore's Handbook," will teach a beginner in a couple of lessons more than a month's study of all the learned books on Ferns published. The biography of a good man is a pleasant thing to read, but to see that man face to face, and to know him personally is far better. After this acquaintance by sight, the study of little peculiarities, aided by magnifying glasses, and by the experience of others, is made doubly interesting.—*FILIX-FEMINA*.

IVY.

Few creeping, trailing, or climbing plants merit so much at our hands as the Ivy (*Hedera helix*). It is most accommodating as to soil and situation, as it will grow almost anywhere, in sunshine or in gloom, and it ever gives a pleasing and lively appearance. It flowers at a time, when

"The rain and wind beat dark December,"

at a time, too, when its leaves of vivid green are so much sought after for the decoration of the "wide hall and cottage small," in celebration of the Christmas festival. It blooms at a season when all the rest of nature is dead alike to the botanist and lover of flowers. Newly-introduced plants we praise and pet; but this rare old plant that clings so tenaciously to the old castle and tower, we do not fully appreciate. From the days of the Druids down to the present time this plant has been held in high repute for covering old buildings, and giving them a more ancient appearance.

Ivies like a dry, well-drained soil, but will grow in almost all soils and situations, and where scarcely anything else will succeed. That is one of their greatest recommendations. For covering unsightly buildings or palings, and in soil unfavourable to the growth of any other plant, the Ivy has no rival; if planted at the foot of a tree all but dead, it quickly converts it into a lovely object; if trained on arbours it adds much to their coolness in summer, to their warmth in winter, and to their beauty at all seasons; and for training on wire or wickerwork round beds it is especially suited. For forming belts in borders the Ivies are well adapted; for blending with other plants in suspended baskets in cool conservatories they are effective; and for ornamenting rock-work, the entrances of caves or caverns, and for rambling over ruins they have no equal.

Ivy is propagated naturally by seeds (the berries are eaten greedily by wood pigeons, blackbirds, and other birds, the blackbirds occasionally feeding their young with them), but under cultivation it is best increased by layers. The most suitable time to do this is in spring, a little before growth commences in March. Having drained a 24-sized pot well, half fill it with rather light soil, and plunge it to

the rim, where a moderately strong shoot can be placed across it with a foot of growth beyond. Bending the shoot into the pot, fasten it down in the centre with a peg, then twist the growing end round the inside of the pot, covering with earth, and finally bring the growing point to the centre of the pot, tying it there upright to a small stick. By coiling the stem round the inside of the pot more roots will be emitted than if the stem were simply placed across it, and it will better endure separation from the parent. The shoots may be layered in the soil around the plant, and though they root with equal certainty the plants cannot be so conveniently moved from place to place, nor can they be so safely transplanted. In either case they will be well rooted by autumn, when they may be detached from the parent, and if in pots removed, plunging the pot in coal ashes in a sheltered situation. The rooting of the layers will be more rapid if they are watered occasionally during dry weather, especially if in pots.

In spring they may be potted in nine-inch pots if large plants are wanted for planting out, and a stake about 3 feet high placed in the centre, in order that the shoots may be fastened loosely to it as they advance. Though Ivy usually grows amongst old rubbish, a little well-rotted manure mixed with the soil will assist the growth of the plants. Shoots layered in the soil around the plants may be separated from the parent in the autumn, and potted in six-inch pots, plunging them in coal ashes in a sheltered situation, and tying the shoots to a neat stake. In this position they may remain another year, watering them in dry weather, and by the autumn of the second year they will be strong plants 3 feet or more in height, having a profusion of lateral or side-shoots, and fit for planting in any position, and to give an appearance at once.

Ivy may also be increased by cuttings. Select young shoots in summer about 1 foot in length, and with a few inches of the old wood, and insert them 6 inches deep and the same distance apart in a shady border of light sandy soil, trimming the leaves off the part inserted. They will root much more certainly and quickly if covered with a frame and lights, shaded from bright sun, and kept in a moist soil and atmosphere, and for the better or more tender variegated kinds a frame is desirable, as they root rather slowly in the open air. The most suitable time for inserting the cuttings I find to be June and July; but they will strike at almost all seasons, if care be taken to select the young healthy growths with a portion of the old wood, especially those having rooting formations, as when running along a wall or over the soil. The cuttings will be well rooted and established by autumn—that is, presuming them to have been put in by July; they may then be potted in six-inch pots if of the strong-growing kinds, or into a less size if of smaller growth, and plunged in coal ashes in a sheltered situation under a fence or wall. If such a position cannot be afforded they should be protected in a frame, and for some kinds a slight protection in winter is necessary, especially in exposed situations.

The plants should remain in pots until they become strong, when they may be planted out, it being desirable to employ strong plants only, for the positions they have to occupy are frequently not conducive to free growth: besides, when strong, they take more readily to any place, and give an appearance at once. In planting the soil should be taken out for a space of about a yard, and about a barrowful of sandy loam (that from turves is to be preferred), well rotted manure, and leaf mould in equal parts, to each plant, will give them a start. This addition of fresh soil is particularly desirable when the plants are against walls, the soil near which is for the most part formed of old rubbish, and when planted around old stumps of trees, where the soil is generally exhausted.

For planting against walls that are a considerable height the common Ivy (*Hedera helix*) has no rival, and it grows equally well on all aspects, but is best suited for a northern one. It is also the best of all for climbing up the boles and along the branches of trees, and may frequently be seen covering many trees to a height of 40 or 50 feet from the ground. The finest sight I have seen of this kind was the trunk and majestic arms of an Oak covered to a height of 45 feet. It had six arms at 12 feet from the ground, and these were covered for 10 feet from the trunk, and 12 feet

above them there were three other arms, each 6 feet long, and then the Ivy rose on the trunk in one unbroken column for 21 feet. The effect was most beautiful. Another fine example of Ivy-covered trees existed at Harden Grange, Bingley, Yorkshire, where two large trees, one on each side of the carriage-drive to the house, were so covered, resembling a gorgeous triumphal arch of massive proportions. This fine ornament was seriously injured by the severe frost of December 25th, 1860.

When planted against a building Ivy should be nailed to the wall, and trained up trellises, or fastened to those objects it may be desirable to hide, and the shoots as they grow regulated, so as to cover the surface as quickly as possible. I do not know whether it is generally known or not, that if trained over wirework it forms one of the coolest and most beautiful of arbours.

The common Ivy is considered to be distinct from the tree Ivy (*Hedera helix arborescens*), but it is my impression they only differ in the treatment to which they are subjected. All the forms of *H. helix* are tree Ivies if allowed to grow to a flowering state without the usual clipping; but the most desirable for their tree-like appearance are *H. helix arborescens*, and the yellow-berried sub-variety (*H. helix baccifera lutea*, which is synonymous with *chrysocarpa*, there being a *H. helix chrysocarpa* from Northern India with narrow-lobed leaves, having silvery veins), but it, like all the others, is no tree unless it has something to climb up, and then it is a tree 10 or 20 feet high, just as the object is high or low, and whether it is cut or not. Cut all the tree Ivies every other year, and they are every one climbers or trailers, but leave off cutting them and they all form bushes or trees from 4 to 40 feet in height, just as the object to which they cling is high or low. For planting against railings, trunks of trees in arboretums, and in shrubberies, the three forms mentioned are unequalled, and to them may be added *H. helix aurea*, with yellow leaves when appearing, but in other respects not differing from the species; *alba lutescens*, with white-belted leaves, and the golden clouded-leaved form (*aurea maculata*), are eligible for such purposes; also the small yellow (minor *lutea*). The silver-margined form (*marginata argentea*) may also be added, but it must be borne in mind that variegated Ivies are not so hardy as the green-leaved sorts, and neither they, nor, in fact, any of them, are suitable for planting in bleak situations. In the majority of gardens, sheltered as they mostly are by trees, most Ivies will be sufficiently hardy to bear exposure in most situations. For covering a tree stump quickly, Roegner's Ivy (*Hedera Roegneriana*), and the Irish, especially the arborescent form (*H. canariensis arborescens*), are very suitable, and, having large green leaves, they are most esteemed for covering buildings on the east and west aspects, *H. canariensis* being the best of all. The tree form, though eligible, is not so good for surface-covering. The Algerian Ivy (*H. algeriensis*), is also fine for a wall, but it requires a south or south-west aspect in cold localities.

These when established should be clipped close every other year with shears, and accumulated dirt brushed from between the stems. The most eligible time to clip Ivy is the first week in April. Where an even surface is desired the loose shoots may be removed in September, cutting to within three or four leaves of the stem from which the shoot takes its rise.

Varieties of climbing habit, and of free but less growth than the preceding, and like them having green foliage, are very suitable for covering low walls. Such are *Hedera taurica*, with small, much-divided, and neat leaves, and its variety *Leeana*, *H. poetica*, *pennsylvanica*, *H. helix digitata* (palmata), *H. helix crenata* (notched-lobed), *H. helix gracilis* (slender-branched); and for forming a close covering on the wall, *H. taurica*, before named, the yellow-fruited *H. helix baccifera lutea*, or *chrysocarpa*, *lobata*, *digitata*, already mentioned, and *H. pennsylvanica*, and these are usually eligible for planting by rails, rustic fences, &c.

Of the variegated kinds the most beautiful are the white-belted (*alba lutescens*, identical with the old *H. helix foliis variegatis*), than which no plant gives buildings such an antique appearance, and the silver-margined (*marginata argentea*). A pair of gold-blotched kinds to match are *aurea maculata* and the smaller gold-margined (minor *lutea*). The palest silvery variety is *H. helix minor aurea*.

with beautiful silvery-marbled leaves, and which is especially suitable for hanging-baskets; and for this purpose the forms of *H. helix marginata* are also well adapted—viz., *Cullisi*, *marginata argentea*, *elegans*, *robusta*, *pulchella*, and *major*, *elegantissima* being the best of all. There is a variety of the old variegated Ivy, with silver-striped leaves, which in winter has the leaves margined and veined with red. It is an exquisite variety, but I am not able to speak positively as to its hardiness, not having grown it.

Perhaps the most beautiful Ivy is the new Japanese *H. japonica argentea*, recently introduced by Mr. Fortune. It has beautiful silver-margined leaves, very distinct, and there is every reason to hope that it will prove hardy on walls with south or south-west aspects, and in sheltered places.

Besides being indispensable for covering walls and rustic buildings generally, or any unsightly object, Ivy answers admirably for planting on rockwork, the small-leaved kinds being very suitable on account of their clinging closely to the stones, and their small foliage having a fine effect. The smaller kinds are, in addition, especially adapted for training on the wirework of beds, they being equally handsome at all seasons, heightening the effect of the summer occupants, and doing away with much of the dreariness of the flower garden at that season. For this purpose the plants should be planted at about 2 feet apart, and the shoots as they grow trained over the basketwork so as to cover it completely in time, training them regularly and evenly in the first instance, and the afterwork merely consists in trimming the young shoots away to two or three leaves in August, and when the growths become very strong the Ivy should be cut quite close with a pair of shears once in every two or three years, care being taken not to cut the strong shoots or stems, or the part above will perish, or make an indifferent appearance. When the shoots are regulated with a knife or nipper twice annually, in April and August, cutting away the strong and ill-placed shoots, stopping the long, and thinning out where too thick, so as to give an even surface, no further pruning is necessary. The small-growing green kinds are best for this purpose, the variegated kinds being unsurpassed as edging plants, but only eligible for sheltered situations.

Then, for forming very ornamental borders the different varieties of Ivies are admirably suited. In most gardens there are many borders that are so shaded with trees that few if any plants will grow in them. I should be very sorry to lead any one to conclude, that no place can be too much shaded for the growth of the Ivy; but it is never seen in perfection except in a north or north-east aspect, or in places partially shaded from the sun's rays. In the shade it grows more freely, and the foliage is of a finer hue, whilst in the sun it soon becomes stunted in growth, partaking of the character of a bush, all its vital forces being directed to the production of seeds, as if nature foresaw that its fate was sealed: hence the provision made for the continuation of the plant. Though adapted for growing in shady places it will not do well in intense gloom; but for surfacing under the shade of large trees where no other or but few plants will grow, quite as much on account of the dryness of the soil in summer as the darkness of the situation, Ivies will be found very useful. In fact, the purposes for which Ivy may be used are so various, that I cannot do more than give one or two more examples. Presuming there is a border 12 feet wide overshadowed with trees, with a fence at the back from 3 to 6 feet high, scarcely anything will grow there in consequence of the ground being rendered so dry by the roots of the trees. It is, however, what may be termed a light yet shady border, and this border is bounded by a walk parallel with, but on the opposite side to the fence, the trees being planted in a line with the last, or a little in front of it. To make an ornament of such a border, strong plants of *H. helix* should be put in along the foot of the fence at 2 feet apart, and the shoots trained to it. Alternately with these in the border, at the same distance every way, another row should be planted, and this is to cover the ground, which ought to incline to the walk for a distance of a yard or 4 feet from the fence; or the fence may be planted with the large-leaved Irish Ivy (*H. canariensis*) if variety is desirable. Two feet from the second row a third row of Roegner's heart-shaped leaved may be

planted at a like distance, and a fourth in like manner, then a double row of the old variegated Ivy, the first 2 feet from the front row of Rognier's Ivy, and the other 18 inches nearer the front. An edging may be formed of the Pennsylvanian Ivy, or the finely-divided Taurian. This edging may be a foot wide. It would be more effective if it were raised by training the Ivy on wickerwork about 6 inches high. All this border would require would be to train each shoot over the vacant ground, keeping each variety separate; and when the surface was covered the only care would be to go over the border in July, and cut off the shoots that encroached on their neighbours, and those rendering the surface uneven. The shoots ought also to be regulated in the same manner in April. Once in three years the whole should be cut quite close with the shears in April, and all accumulated dirt cleared away.

To form a border of Ivy in the bedding style, plant the first two rows with the common Ivy, which would give a four-foot surface all along the back of the border in addition to covering the fence, then stretch a garden line along the centre of the space left, and at 4 feet from the end, with a radius of 2 feet, describe a circle, which will, of course, be 4 feet in diameter; go 8 feet from this centre, and describe another circle, and so on to the other end. Raise these circles a foot high in the centre with any kind of rich, light, rubbishy soil or compost, and plant the first with *H. helix minor marmorata* as a band round a centre of *pennsylvanica*. The second circle should be planted with the golden clouded palmate form of *H. helix marginata* (*palmata aurea*). The third circle should have *marginata* Cullisi in the centre surrounded with *H. helix major*; the fourth a centre of *H. poetica*, strung round with *H. helix aurea minor*, or small-clouded gold-leaved; the fifth may be the white marbled-leaved Irish (*latifolia maculata*); the sixth, the golden-clouded form of *H. helix (aurea maculata)*; the seventh, the silver-tree Ivy (*alba lutescens*); the eighth, the large-leaved Irish (*H. canariensis*); the ninth, the richly golden-blotched (*H. helix arborescens minor lutea*); the tenth, the fine silver-margined form of tree Ivy (*H. helix marginata argentea*); the eleventh, the golden-blotched Irish (*H. canariensis aurea maculata*); and the twelfth, a full bed of *H. helix*. If these are not sufficient to reach to the centre of the border, then instead of planting every alternate bed with the silver or gold-leaved, it may be formed of a green-leaved kind, and this will extend the length. The other half of the border should be planted in the same manner, either reckoning from the ends, or better from the centre, which should always be of green Ivy, the old sort. The ground between all the beds should be planted with the heart-leaved Rognieriana, and completed by an edging in front, next the walk, of the very elegant *H. helix minor marmorata*. The beds in which the smaller kinds are planted should be covered with small stones for the branches to cling to and run over, and use low wickerwork for the edging. In a few years this border would be quite a garden in the depth of winter. Presuming further that there were another border like the last on the opposite side of the walk, and a row of trees behind it exactly corresponding with the other, the arms of the trees all but meeting, could anything be finer than to form a dome of wirework at each end, string the space between the trees with strong wire, in the form of arches and festoons, and cover them with Ivy? This might be trained so as to cover the trunks of the trees, if these are at all old; but if they are young and wanted to grow larger, it must be kept away from them, otherwise they will be strangled.—G. ABBEY.

THE LATE ASSISTANT-SECRETARY OF THE ROYAL HORTICULTURAL SOCIETY.

ALTHOUGH Mr. Murray has retired from the office he has filled so incompetently, yet, as a warning to his successor, I will note some other irregularities perpetrated by him, such as the members of no society would tolerate.

Fellows of the Society wishing to ballot for Cattleyas and Epidendrums on the 20th instant are required by a paragraph in the "Proceedings" to "fill up a special form, which may be had on application to the Assistant-Secretary. The form must be returned before the 17th." Now those forms

were not ready on the 17th. I believe they were never printed or written at all. But the neglect and irregularity did not end there. The balloting was announced to take place on the 20th at three o'clock, and I know those who attended before that hour, when they were informed that they were too late, for the balloting had taken place at two! But the irregularity did not conclude even there, for the explanation was that a meeting had been held for the election of Fellows, and they had balloted for the Cattleyas and Epidendrums first. Now it is true, yet scarcely credible, that that day there was no power to elect Fellows, for in the "Proceedings" the day announced for such election is the 24th, and not the 20th!

I need make no comment, but after recent changes of names, and recent elevations to the rank of baronetcy, I should not be surprised to see our ex-Assistant-Secretary step forth in an early Gazette as Sir Andrew Muddle.—AN OLD F.R.H.S.

LILIUM LANCIFOLIUM AND LILIUM AURATUM.

Is it true in horticulture that in the "multitude of counsellors there is wisdom?" for if so, how is one to act? Some little time ago some correspondents gave the result of their culture of *Lilium lancifolium*, and told us that success rewarded their efforts. Their plans differed slightly from one another, yet it was possible to see that a very similar treatment was adopted by both, although perhaps the objects in view were different; while Mr. Hague, in a late Number, smiles at the treatment they adopted, tells us of his own, which differs very much from the others, and assures us that he, too, is successful in his treatment. "How happy could I be with either," one may indeed say; but as to agreeing with both, that is clearly impossible; and I am driven to this conclusion, that *L. lancifolium* is a much-enduring and cosmopolitan bulb, which will thrive under very opposite treatment. I have observed the same thing with regard to *Vallota purpurea*. One tells you to keep it quite dry during the winter months, another to keep it constantly growing and well watered; and the advocates of both systems assure you that they have succeeded admirably—indeed, I have seen the bulbs thus treated, and am bound to say that they did not seem much to mind which way it was. And so, perhaps, with the Lilies. As to planting one or more bulbs in a pot, that must depend on the taste and requirements of the growers. If, as I suspect in some cases, they are cultivated for exhibition, then five or six bulbs must be put into a pot, but if merely to obtain a good plant with large blooms they must be grown singly. While on this, I should like to know whether your correspondents have found that their bulbs degenerate after they have reached a certain size. I am not the only one who has experienced this, for a very large grower told me a year or two ago that he was obliged to renew his stock from abroad, owing to this cause.

It is sometimes complained of by those who have grown this bulb that they cannot get so many blooms on a bulb as Mr. Hague, for instance, mentions—16 or 18. I am quite sure that this is in some cases impossible. A large proportion of the roots now sold have been raised from seed, and every raiser of seedlings knows how his productions vary in this as well as in other respects, and hence disappointment is often occasioned. Beautiful as this Lily is, it does not make so effective an exhibition plant as one might imagine; the delicacy of the marking, so charming in itself, not giving effect to the plant as a whole.

No more striking instance of the effects of enterprise can be adduced than the present price of that queen of Lilies, *Lilium auratum*. I was with Mr. Standish when his first plants came into flower, and then fifteen guineas was the price. Little more than two years have passed, and now the same sized bulb can be had for half a guinea, owing to the large importations which have been made from time to time. What this bulb is yet to do we know not. When Sir William Hooker described it in the "Botanical Magazine" he called it "probably one-flowered;" but already it has been shown with nine blooms, while Mr. Barron has flowered it with fifteen, and we may expect some gorgeous sights

connected with it yet. Imagine four or five bulbs in a pot, with fifteen blooms on each.

I should like very much to know if there was anything very remarkable in the plant of Mrs. Pollock for which a first-class certificate was awarded the other day at the Royal Horticultural Society's meeting. A cutting struck in August and kept in a cool greenhouse is no great wonder. Was it as large as a Currant bush? or wherein did the great merit consist? It does strike me that first-class certificates ought to be very carefully awarded, and the reading of the notice does not give one the idea of anything superexcellent; but in this I may be wrong.—D., Deal.

FRUIT AFFECTED BY SOIL AND CLIMATE— POTATOES.

A WRITER in your Number of January 17th, (page 47), who signs himself "FRUIT-EATER," in speaking of the fruits of America, says that country and this would probably find first-rate prizes in the other's rejections, and he instances some Apples and Pears which are here considered of the first quality as being worthless there. I am not aware that he brings forward any that are considered worthless here as being found first-rate in the States. Nevertheless, without going so far as the United States for proofs of the character of fruits being changed, there is great truth in what he says. Take the Beurré de Rance Pear as an example. Here in our wet climate and heavy clay soil it is in average seasons of first-rate quality when properly matured; whilst in the rich alluvial soil of Wharfedale, five and thirty miles off, it is utterly worthless however treated. It is even different in the vicarage garden at Whaley, only four miles hence, having there more astringency than those grown here, but still very good. Williams's Bon Chrétien, which Dr. Hogg in his "Fruit Manual" says is one of the finest of Pears, is here utterly worthless; and the Glou Morceau, of which he says "A first-rate Pear," although it becomes melting, is always flat and turnipy in its flavour here. It is, however, hardy and bears well.

We have a great deal to learn about the effects of soil and climate on fruits. I quite agree with Mr. Rivers when he says every fruit has its peculiar season, when its true flavour is more fully developed than in ordinary seasons; and that this is not always in the finest years was proved to me in the wet and cold year of 1860. The Louise Bonne and Seckle Pears were finer in flavour from my trees than they have been either before or since.

"FRUIT-EATER" goes on to say, "In Gooseberries we are unrivalled by the produce either of the continent or western hemisphere, and therefore by a strange confusion of thought, similarly exercised in relation to other things than fruit, pass scornfully by what we should rear very delicately were they not so thoroughly un-aristocratic as to grow quite delicious without other help . . . than our own dull atmosphere. I have seen and heard a good deal of Black Hamburgh Grapes, but have yet to feast my eyes and taste upon any that shall half reach the excellence of the produce of some very plebeian Gooseberry bushes within view from my window."

I concur in every word of this opinion, and think a finely ripened Gooseberry from the old upright-growing Red Champagne, which I remember grew in my father's garden sixty years ago, is superior to any Black Hamburgh Grape I ever tasted; and I also think that if the time and money which have been spent in raising large Gooseberries had been devoted to raising good ones, we should by this time have had Gooseberries equal to any Grapes that ever were grown, for I think that fifty years as sedulously devoted to flavour as they have been to size would have produced something good before now. If "FRUIT-EATER" has any other sort which is equal in quality to the Champagne I should be glad to receive cuttings from him. For many years I attempted to raise Gooseberries from seed, using the berries of the Champagne, but I never raised one equal to the original stock. My great difficulty arose from cross-fertilisation. I had among my seedlings white, green, red, hairy and smooth, all from one variety. This I attributed to the bees, and therefore think, if attempts are again made, the parent tree should be far removed from all others.

Many of your correspondents speak of the Lapstone Kidney as very good; but in describing the quality, the sort of soil in which it is grown should also be stated, or it will mislead. Notwithstanding its excellence I have ceased to grow it, for it is so liable to disease in heavy clays that I never dug as many as I planted. On the other hand the Fluke, which in the light, rich, alluvial soil of Wharfedale is a heavy, waxy, worthless Potato, is in the wet clays of this district of great excellence; and as a proof that it is so, it commands the highest price of any store Potato in our markets.

The growers of first early kinds should keep their eyes open if they wish to raise new kinds, as occasionally, although very rarely, a first early Potato will have a bunch of apples growing and ripening on the stem. If these be carefully preserved, and the seeds carefully washed out and sown in the spring, many early varieties may be raised, some of which may be of great excellence.

I concur with Mr. Barnham in thinking the Beurré Clairgeau a good Pear. Here it is very superior to the Glou Morceau—another instance of what I have elsewhere remarked, that soil and climate make very great difference in quality.—T. G., Clitheroe.

PROTECTING TREES FROM HARES AND RABBITS.

IN reply to "E. F.," in No. 198, I beg to state, that during the progress of alterations at this place last spring, a great number of rabbits and a few hares found their way into these grounds, and notwithstanding trapping and other means being resorted to to destroy them, they have remained in possession (more or less), up to the present time. In the meanwhile they have destroyed a quantity of Berberis Wallichiana, variegated Hollies, variegated Savin, &c., as well as commenced to gnaw the bark of some Conifers until we dressed the stems with a mixture of night soil and soot, which has proved so far not to their palate. Mahonia (Berberis) aquifolium and fascicularis, and Berberis Darwinii have not been touched, whilst the others in close proximity have been eaten to the ground.—J. PRODDER, Gardener to E. E. Peel, Esq., Brynnyps, Ruabon, North Wales.

COTTON SEEDS SOWING.

IN answer to my notice stating I had some Cotton seed to give away, I have received more applications than I can comply with for a few days, but after that time I shall be able to supply each of the applicants in ample time.

Several correspondents have requested me to write to them, but I cannot do so, as it would entail more labour upon me than my engagements will permit. For the benefit of all wishing to raise and cultivate Cotton-plants, I will now state the little information I possess.

The seed should be sown in good new soil, covering the seed with it about half an inch. I cover mine with Sphagnum palustre, or grey Bog Moss, but mine are only sown for the purpose of testing the quality. I sow fifty from each packet sent to me, taking them without sorting, and then report how many germinate from the seventh to the twelfth day after they are sown. This enables the Cotton Supply Association to tell which seed offered to them is really worth buying. I then throw the plants away.

The seed readily germinates in a temperature of about 70°, and if intended for growing up to blooming, the plants should be kept pretty close to the glass, and have plenty of air without being subjected to cold draughts, and if they are kept steadily growing with nothing to overshadow them they will bloom at the back of the house.

I have flowered them, but never induced them to produce their cotton. I believe those who have plenty of room and time can ripen their seed, and, of course, have their pods of cotton.—JOHN HAGUE, 36, Mount Street, Ashton-under-Lyne.

ROYAL HORTICULTURAL SOCIETY.—Saturday last being the day appointed for the Early Tulip Show, we went to South Kensington. It was grand and none but a few from the Society's

own garden. Major Trevor Clarke sent a small plant of *Chrysanthemum Prince Albert* in good bloom for this late period of the season. Except the remains of the previous weeks' shows this was the only plant of any kind exhibited.

A NOVEL FEAT IN GRAPE-GROWING.

PROPOSITION.—Given in January an eye of a Grape Vine; to propagate from it, and cultivate a plant capable of bearing three or four well-shaped bunches of Grapes averaging three-quarters of a pound, berries well swelled, nicely coloured, and richly flavoured, for the decoration of the Christmas dinner-table the same year.

I saw this beautifully accomplished at Coombe Abbey in 1863. Perhaps Mr. Miller will kindly enlighten us by stating his mode of operation.—P. M.

THE ARBORETUM—DECIDUOUS TREES.

IN a recent Number, at page 23, Mr. Robson has touched upon a subject which must yield to none in importance in whatever point of view we regard it. In the article, "*Arboretum versus Pinetum*," the fact that arboriculture either has been and is neglected, or is at the present time confined to only a branch of it is fully brought out, and in calling public attention to it, Mr. Robson has rendered another service to the cause of horticulture.

Not presuming to sufficient knowledge and experience to act as "counsel for plaintiff," I am content, if it is permitted to me, to appear as a witness in the plaintiff's interest.

It is long since I had in mind to direct attention to the circumstance, that while California, British Columbia, Japan, and other distant regions were found to be rich in the most beautiful and attractive, and probably many of the most useful of the Coniferous tribe, not a single addition worth mentioning had been brought thence to our deciduous trees; not that those countries produced none, for there appears no evidence to that effect, or those countries would be exceptions to the general rule, that the finest and most valuable deciduous trees which are found in the north temperate zone of both hemispheres. But it is far more probable that the collectors whose labours have extended to these distant parts have altogether neglected the deciduous trees, and that, too, under the influence of causes which have long existed—viz., the planting and formation of arboreta in which indigenous and exotic deciduous trees have the prominence due to their value, beauty, and numerical proportion has been for many years in abeyance or out of public favour. Thus many specimens of exotic species already introduced and existing in England are so seldom seen, or are so few in number, that their beauty and utility are not appreciated; and, therefore, not being sought after, no thought is taken of them, or to add to their number by propagation or further introductions. It is time that such a state of things should cease, for it does, as Mr. Robson says, little honour to our discernment; and now that the subject has been fairly broached, a discussion of it may not be without good results.

What ordinary pen can adequately express the glory of the forest trees, or describe their beauty, their majesty, nay, their grandeur? They are the men of the vegetable creation, and as such claim all the honour due to majesty and strength. Nor is it altogether necessary to descend too much in praise of things simply as they seem in the columns of a Journal, where the main object is rather a sober discussion of useful truths, and to elicit facts of utility whether they be to afford innocent pleasure or to contribute to an economic purpose. In either case trees stand out prominently for notice. Their size, form, diversity of foliage, and in many cases the beautiful flowers with which they are in one or other season of the year adorned, are all points affording the highest gratification, and must strike the most careless observer even; while the solid comforts we derive from their fruit, timber, bark, gum, resin, and other products are too obvious to require enumeration. Such being among the conspicuous characteristics of trees, ought we to rest satisfied with what we possess? And while the remotest regions of the earth

are searched to add new charms to our greenhouses, conservatories, and flower gardens, can no addition be made to our parks and woodlands?

These inquiries have been only partially responded to—that is, we have received numerous additions to our hardy trees, but all of similar character. At the same time these additions bear striking evidence of the enterprise and courage that has been the means of enriching our land with them, for there is no region in the north or south temperate zones, or mountain district in Europe, Asia, Africa, or America, that has not supplied fresh varieties of the Coniferae, as the numerous Pinetums amply testify.

Though striving to awaken interest and immediate action in the work we have before us—and in this *we* I solicit permission to include all true, zealous, and enlightened friends of horticulture—let us not depreciate the stately symmetrical Conifer; let us give it all the consideration it deserves; let us fully acknowledge its ornamental qualities, and avail ourselves of its utility; but let it not monopolise our whole thought in its relation to arboriculture; let it have its share, and full share; for how could we dispense with the least jot of marvellous beauty that is brought to our view in the lovely forms we now possess, reminding us of distant scenery (but faintly, perhaps), which few, very few of us can ever hope to see, and still more of the wondrous works of Him who made all things? But for the argument, or rather hypothesis induced in the article above referred to. If the most distant countries of the world can furnish so many additions to the pinetum, are there not deciduous trees there in a similar proportion as in other countries, and equally varied in character, and which can give increased variety to our own species, and add new charms to our woodland scenery? Let us hope that the noble enterprise that has accomplished the one may achieve the other, and that speedily.

It is but too true that the introduction of fresh kinds of deciduous trees has been grievously overlooked. It is rather commonplace to ask how a park would look with all Conifers, or even with a majority of them. It is too well known how monotonous is the sight of a Fir or Pine plantation, and that no comparison can be made between such and a natural wood. Nor is it difficult to find a reason why exotic deciduous trees have not been more extensively planted of late years. Nurserymen will not be at the pains to propagate what they cannot sell; proprietors cannot plant what cannot be obtained; but we are taught by one of the simplest rules of political economy that if the demand is increased the supply will follow. A knowledge of the existence of useful and ornamental deciduous trees must be made known, and a sense of their value entertained, then we may hope to see the desired object attained. The great work of Loudon remains upon the shelves year after year, unconsulted and unthought of, and it must therefore become one of the duties of gardening periodicals to spread abroad this knowledge.

It is not my purpose to investigate minutely the causes that have led to the neglect of the more extensive planting of deciduous trees. Ignorance on the part of botanists and those who pursue botany as an intellectual amusement is certainly not one of them. Before briefly stating the arrangement of detail with which I propose to follow up this article, I cannot forbear quoting the beautiful lines of the poet.

"No tree in all the grove but has its charms,
Though each its hue peculiar; paler some,
And of a wannish gray; the Willow such,
And Poplar, that with silver lines his leaf;
And Ash, far stretching his umbrageous arm.
Of deeper green the Elm, and deeper still,
Lord of the woods, the long surviving Oak.
Some glossy leav'd, and shining in the sun
The Maple, and the Beech of oily nuts
Frolics, and the Lime at dewy eve,
Diffusing odours; nor unnotic'd pass
The Sycamore, capricious in attire.
Now green, now tawny, and, ere autumn yet
Hath chang'd the woods, in scarlet honours bright."

No further argument need be adduced in favour of the restoration of arboriculture to its legitimate rank, and a healthy and vigorous existence. There is, or was, an arboricultural committee of the Royal Horticultural Society. What are they doing? What have they done?

The particulars with which it is proposed to follow this article will comprise an account of many of the exotic deci-

dnous trees that have already been introduced into Britain, and of others known to exist in their native woods. This account must necessarily be concise, but it is intended to point out the most conspicuous features of each species, and to mention its utility as far as known. The list will doubtless not be without omissions, and may contain inaccuracies, which shall be open to correspondents to supply and correct, it being understood that such will be thankfully accepted. The information has been compiled from trustworthy sources, and having in past years made a collection of leaves of all the exotic deciduous trees that I have met with, these will in every instance be examined when penning the notes. Indigenous kinds, grand and equalling, as they do, all foreign species, will therefore be omitted, or if named, only passingly alluded to.—ADOLPHUS H. KENT, *Blechnigley*.
(To be continued.)

MORETON HALL,

THE RESIDENCE OF GEORGE HOLLAND ACKERS, Esq.

MORETON HALL, situate at a distance of about three miles from the town of Congleton to the south-west, the princely residence of George Holland Ackers, Esq., R.N., is a mansion of some pretensions, built in the castellated style, presenting a noble exterior, and its interior accommodation is most ample. There is a banqueting-room 36 feet wide, 70 feet long, and proportionably lofty; adjoining this is the dining-room, 54 feet long, entered by folding-doors of large dimensions; and ranging with these is the saloon about the same size, likewise having folding-doors. The three when thrown open form one immense room, producing a magnificent effect. This mansion was built to supersede a fine baronial hall, such as there are but some solitary instances remaining; its external is composed of timber painted black, and the intermediate portions whitewashed, the novelty of the sight and cleanly aspect attracting the notice and admiration of travellers; the only drawback is its being near the main road and in a low situation. The residence stands about a mile and a half from the Mow Cop station on the North Stafford Railway, and about three miles from the summit of Mow Cop—a place famous for pic-nic parties during the summer season—the altitude of which is 1091 feet above the sea level; it is surmounted by its old tower, and an isolated rock called "The Old Man of Mow." The mansion and gardens are situated in a beautiful park, the principal entrance being on the north side leading from the road from Congleton to Newcastle, the other commencing at the eastern extremity of the park nearer the gardens. The latter being the way by which I entered, I passed by a handsome Gothic lodge through two large iron gates, opened by machinery from the interior of the lodge; these gates were supported by two massive stone piers. The gardens may be about a quarter of a mile from the east lodge, and, perhaps a little more than a mile from the north entrance, and after passing through a shrubbery, which obscured the garden walls from view, we came to the back part of the gardens, where there is that indispensable part of a large establishment, called the frame-ground.

In the frames there were large quantities of fine healthy Cinerarias, in almost endless varieties, for greenhouse decoration. Strawberries in pots were placed under spare lights for early forcing to protect them from heavy rains, which are very frequent in this climate in the autumn, and also to assist in ripening the crowns and perfecting the embryo fruit. On a bed of coal ashes was a fine collection of Chrysanthemums, with dark green leaves hanging over the sides of the pots. Close at hand was a large quantity of cuttings of various sorts of bedding Geraniums being struck in the open air, without any covering of glass, just in the same way as I have seen the bulk of the bedding Geraniums propagated at the Crystal Palace, and the same as the late Mr. Beaton used to advocate in the pages of this Journal. Propagated thus there is less trouble keeping them through the winter than when coddled in heat, and they turn out more robust and vigorous in the spring. Along the back wall of the kitchen garden was a Mushroom-house, from which a succession of Mushrooms is obtained all the year round.

We now pass through a door into the kitchen garden, surrounded by high walls. It covers about two acres and

there would be about another acre of kitchen-garden ground outside the walls. Near the entrance was a range of span-roofed houses running east and west, and divided into four compartments. The first was devoted to such plants as Azaleas, the retarding of Achimenes, &c.; the second contained fine specimens of *Lilium lancifolium*, *Fuchsias*, &c.; and the third was a cool fernery; but to enumerate all the beautiful plants it contained would simply be to recapitulate the lists published in a respectable nurseryman's catalogue; suffice it to say that all the plants were in perfect health. The fourth compartment was a useful propagating-house.

In close proximity to these houses was another range in two compartments, which were north and south. The east side of the first house was devoted to winter Cucumbers and very late Melons. The Melons are planted at each end, and the Cucumbers in the centre, both are trained to the trellis near the glass. When the Melons were cut the plants would be removed for the elongation of the Cucumbers. The varieties of Melons grown were *Trentham Hybrid* and *Mounsdon's* Moreton Hall, the latter a variety raised by Mr. Mounsdon, the intelligent head gardener. On the opposite side of the house was a good selection of stove and greenhouse Ferns and Lycopodiums. On the roof was a large plant of *Allamanda Schottii*, but it had not cheered its admirers this season with its golden flowers, probably owing to its being turned out of a pot into the open bed in the early spring, which caused it to run too much to foliage instead of bloom. In the next house was a collection of stove plants. There were good specimens of *Gloxinias* both of the erect and drooping varieties, *Begonias*, fine *Cockscombs* 2 feet across, fine-foliaged *Caladiums*, a very good plant trained balloon-shape of *Hoya bella*, and *Cyrtoceras reflexum* covered with its beautiful racemes of white flowers. Under bell-glasses were *Cephalotus follicularis*, the pretty little Pitcher-plant, and from the roof was gracefully suspended the fragrant *Stephanotis floribunda*.

Passing out of these houses we entered two Peach-houses, each 60 feet long; they are furnished with neat narrow paths in the centre, and are 7 feet wide; the back wall and front glass is 12 feet high, the apex may be 12 or 15 inches higher, and air is given by means of machinery. The front sashes open behind each other, running on wheels in a groove. The front of the houses and back wall are planted with Peach and Nectarine trees; the trees at back are trained to the wall, and those in front to a trellis about 15 inches from the glass. The front trees are allowed to grow about 5 feet high. At intervals of about 15 feet or between each tree are Vines planted at back and front, and trained to an arch underneath the roof, from which were suspended some splendid bunches of Grapes. What with the luxuriant Vines that shaded the pathway, the fruit suspended from the roof and hanging on either side in such beautiful clusters, and the delightful odour exhaled by the ripe Peaches on the wall, these houses were at the time of my visit (September), a delightful promenade. Next in order was an early vinery, in which fruit was still hanging. The Vines are planted in front of the house about 2 feet apart. This plan is an advance on planting one Vine under each rafter at about the distance of 4 feet; for the same number of bunches can be taken from the roof of a house, and only half the number from each Vine, and, as a consequence, the individual bunches must be much finer.

Stepping out of this house I rambled round the kitchen garden. My attention was arrested by the fruitful condition and peculiar mode of training of many of the goblet-shaped Apple and Pear trees. This style of training seems a prominent feature at this place, and the quantities of fruit would be great and fine in quality. On the west wall were some very fine Plums, and the wall with a north aspect was covered with Morello Cherries extremely fine, and covered with two thicknesses of netting to protect them from the depredations of the feathered tribe. Glancing on to the different quarters I observed large beds of winter vegetables, such as Borecole, Brussels Sprouts, &c., and from their vigorous growth and the dark green hue of their foliage they exhibited little evidence of the previous drought.

We now pass through a door at the west end of the kitchen garden, which brings us in the direction of the mansion. A

large mound of earth thrown up a considerable height and covered with *Rhododendrons*, entirely hides the kitchen garden from the mansion and the principal parts of the pleasure grounds. The wall is flanked with a broad ribbon-border, and beginning at the back there were four or five rows of Red Beet, next yellow *Calceolaria*, then *Geranium Tom Thumb*, the next row *Lobelia speciosa*, finishing in front with a broad band of *Cerastium tomentosum*. We now pass through a short tunnel underneath the above-mentioned mound. To the right, at the east end of the mansion, are the stables, carriage-houses, yard, &c., but all judiciously screened from the view of the visitor. To the left was the ice-tower. Passing through a door we come to a broad terrace-walk on the south side of the mansion. This walk was about 540 feet long, and 60 feet wide. The carriage entrance is on the north side through a lofty portico, beneath which there is ample space for a carriage and four horses to pass. The mansion, I should have before stated, is nearly 300 feet wide, and I very much regret the inability of my humble pen to do justice to its ample proportions. From the centre of the terrace-walk on the south side of the mansion, a gravel walk 12 feet wide runs down the pleasure ground. At each angle stand fine specimens of *Araucaria imbricata*. As I passed down the walk I noticed to the left, the geometric flower garden, but when I took into consideration the extent of the pleasure grounds, the beauty of the terrace and other walks, and the princely grandeur of the mansion, I thought the flower garden far too small. The beds were nicely planted, and the flowers were extremely gay. The centre and four corner beds were planted chiefly with *Asters*, and although I never saw such a grand collection of that beautiful flower, nor so well grown, I thought them out of place in the flower garden in such large masses. Proceeding down the centre walk I came to a wooden bridge which spans the lake, a fine sheet of water, though rather narrow where the bridge is fixed. Near this place were some fine deciduous trees which must make this a charming retreat during the hot days of summer.

Bending our steps onwards through an interesting shrubbery, we bear to the right on a path which brings us to the western boundary of the pleasure grounds; a broad terrace walk forms the southern extremity. On the lower side of the walk is a low wall covered with Ivy, on the upper side a bank of earth extending the whole length and entirely concealing the walk and wall from the mansion and the upper part of the ground. At each end of this terrace walk, upwards of 600 feet in length, is a bastion that gives a kind of finish to the walk.

I must now take my leave of Moreton. Before we had got all over the pleasure ground the shades of evening set in, I felt satisfied with what I had seen, and derived from it much information and profit; indeed, any gardener may be benefited by visiting the neighbouring gardens and noticing the errors or progress in the labours of others. I thought we might go long expensive journeys from home expecting to see variety and novelty, while everything we wish for may be found in our own immediate neighbourhood. I may say in conclusion that every part of this extensive domesne was in first-class keeping, and reflected great credit on the ability of Mr. Mounsdon, the respected gardener, who with the utmost courtesy was anxious to point out every part of the gardening establishment worthy of notice.—QUINTIN READ, *Biddulph*.

GLAZING WITHOUT PUTTY.

In compliance with your request for information respecting the above mode of glazing, I have to state that I saw one greenhouse so glazed in the neighbourhood of Boston, U.S. It had a neat clean appearance, and was most favourably reported of as a secure house. My informant stated that the glazing was not so liable to be injuriously influenced by the weather as when done with putty, which one can readily believe, as most of the leaks in our houses are caused by defects in the putty or puttying.

The way in which the house alluded to was glazed was this—after the priming coat the glass was laid on in the usual way, but without bedding; the panes were securely pegged in, and then three or four coats of white lead given, which proved quite capable of resisting the great extremes

of heat and cold in that country, and I should imagine would prove fully as efficient in this. At all events it would be worth trying whether putty cannot be dispensed with, for it is a source of annoyance in more ways than one. I should think that if the glass were laid in a fresh coat of white lead, and three coats over it, it would be still more secure than the above mode.

I have heard that white zinc is a better paint for out-door work than white lead. Can you, or any of your readers, confirm the report?—J. K., *Arch Hall Gardens*.

POTATO PRODUCE.

I NEVER for a moment thought of imputing anything to "AGRICOLA," "W. W. H.," and "UPWARDS AND ONWARDS," nor did I desire to lessen the value of their experiments. On the contrary, I read them with great interest and profit, as many of your readers have, no doubt, likewise done; but I objected (and I see no reason to vary in that respect, even after the temperate reply of "AGRICOLA"), to the produce per acre being calculated by the quantity of seed set. I do not think that seed Potatoes are of a uniform size, nor that 14 lbs. of sets of a Round Potato would plant the same ground as 14 lbs. of Kidneys, or another kind. From experience I have found sets vary much; there being no more than sixty in some cases in 14 lbs. of sets, whilst in others there may be as many as eighty-seven, and in one case ninety-seven, and these selected sets.

I think, therefore, that to calculate the produce by a given quantity of sets, varying in number so much as they do in different varieties, is apt to lead to an incorrect conclusion, for it follows that 14 lbs. of sets of a small sample will plant half as much more ground as those of a larger size of a finer sample—that is, presuming them to be planted at equal distances.

It is, I think, well known that one kind of Potato will plant half as much more ground than some other varieties, simply because the Potatoes themselves vary in size, the sets being large or small in proportion to the sort. How, then, can the produce per acre be calculated when it is not known what ground they occupy? They might all occupy an equal amount of ground, but of that we have no proof, and if one occupies more ground than another, that one has an undue advantage over the other.

Irrespective of the unequal number of sets in a given quantity by weight, the distance they are planted apart also makes a wide difference in the calculation. "Ordinary distance," writes "AGRICOLA," "with the rows 3 feet apart." We are left to guess what ordinary distance signifies. In some localities Potatoes are planted in rows 2 feet 3 inches apart, 2 feet 6 inches, a very common distance, 3 feet in some cases, but this is rare amongst Potato-growers, and occasionally 3 feet 6 inches; as for distance in the rows, some plant at 1 foot, others at 15 inches, some at 18 inches, others at 20 inches.

"UPWARDS AND ONWARDS" does not relieve my doubts on this head. He plants in rows 42 inches apart, and from 15 to 20 inches apart in the rows. Here again a difference of 5 inches will tell immensely in calculating the produce per acre from a small quantity planted. I can assure the last-named correspondent that I do care to bear in memory what he writes, and am much interested and benefited by perusing his occasional papers in this Journal. His notices of distance and of ground occupied are certainly given in some of his articles, "sufficient to suit the customs of most localities," by which I presume sufficient is written for practical purposes. That I readily admit; but viewing them as experiments I think they lose much of their value through the omission of important particulars which he is so particular in recording with reference to some varieties—viz., the ground occupied, the size of the sets, and their distance apart. "AGRICOLA" writes, he "had credible information of a still higher result than that obtained by 'W. W. H.' and Mr. Lupton." Perhaps he will state when, where, and by whom.

"UPWARDS AND ONWARDS" claims a greater yield per acre for his root of Negro than that of Mr. Lupton's two roots. His occupied a square yard, those of Mr. Lupton 4 feet on the side, or 16 square feet, and yet his is the

heaviest (or equal) produce per acre. Mr. Lupton's sets were of average size. They did not spread so much, as they were strong.

I most cordially agree with the concluding sentence of "AGRICOLA"—viz., "that the free discussion of this and similar topics is not an unimportant step towards further progress," and I can assure him that I had no other object in view than to further that result as much as possible.

We have yet to learn many things in Potato culture—viz., the distance at which they can be most profitably planted, the kinds most suitable for different soils, the most desirable kinds for eating and also for productiveness, the most beneficial manures, and the most approved method of growing this

crop. All this can only be secured by instituting a set of experiments in different localities, each person planting an equal number, an equal weight, and an equal quantity of ground. We have clubs of all sorts, and I think none would be more useful than a "Potato Club," such as was proposed some time ago by Colonel Newman, Hillside, Cheltenham. Their experiments and experience would form a very interesting and valuable, because reliable, report, and the annual dinner would be all that could be desired, each exhibitor being obliged to exhibit his dish not only fit for table but fit to eat. All the members present would be judges, the winner obtaining his laurels by the votes of the majority. —G. ABBEY.

AURICULA CULTURE.

A ONCE very popular plant, though it has lost very many of its old supporters, is, I am pleased to see, likely to again become a more general favourite, though I regret to say that it is very questionable whether many of the best old sorts are not entirely lost. Though I cannot assist in obtaining those old favourites I will give a few short notes upon their culture generally, as they may be of use to amateurs and others not well informed upon the subject.

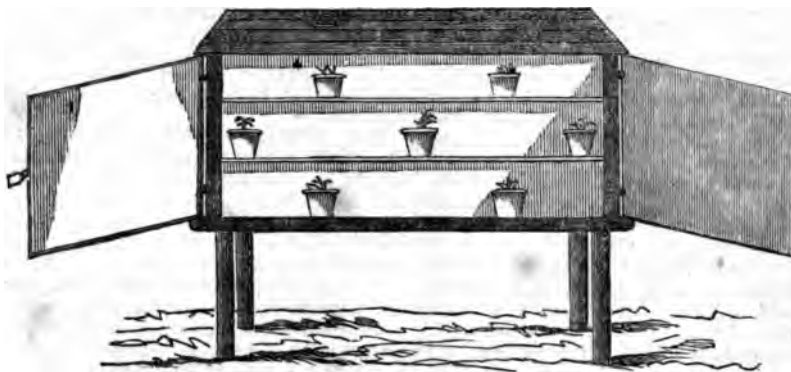
The plants having done flowering, about the beginning of May place them on slates in the open air, or, what is better, in an Auricula-frame, to which I intend referring before concluding. They should be placed in such a position as will admit of the morning sun shining full upon them until about nine o'clock, but the situation to be a shady one during the remainder of the day. Carefully keep them clear of all dead leaves. These when they decay should be removed, taking every precaution, by the use of both hands, not to tear or otherwise injure the plant in taking away any leaf which may not be ripened at the base. Such seeming trifles can not be too strictly enforced in the culture of good varieties of this plant. In dry weather water with moderate freedom, being careful that each plant has its drainage perfect. About the first week in June remove them into their summer quarters, which should be a shady situation in a cool place, where the air can have tolerably free access to them, still continuing to give them waterings when required.

About the second week in August prepare to pot them. Stimulating composts, though successful for a season, are very detrimental to lasting vigour in plants of this tribe, and are indeed the primary cause of early decay. The compost I advise is one part of good loam (yellow) obtained from thoroughly decayed turf, one part of thoroughly decomposed leaf mould (unless the turves from which the loam had been obtained were very thin, for if so the decayed herbage will be sufficient, and leaf mould may be dispensed with), one part decayed frame-dung, or one part cowdung which has been laid by and kept moist for a lengthened time, the latter is preferable. Add to these a fourth part of silver sand, and, where obtainable, a liberal dash of river sand—siftings of small grain well washed. Where this latter is not to be had a few potsherds broken small will answer instead. Previous to mixing these ingredients together let them dry if necessary, for unless they are all moderately so it will be exceedingly difficult to thoroughly incorporate them. The compost prepared, well cleaned and effectively crocked pots will be necessary. The crocks should be up as little room at the bottom of the pots as possible

If the plants are young, or offsets, turn them out of the pots, and carefully pick out from amongst the roots some of the older soil. Give them a moderate shift, and press the soil firmly around the old ball. Should the plants be old shake away most of the old soil, and having carefully pruned and cut away all dead roots, &c., repot them in moderate-sized pots. In doing so care should be taken to properly divide the roots from each other, shaking the soil nicely between and around them, and keeping the crown well up. Having given them a good watering, they should be again placed in a shady sheltered situation, until, having made

fresh roots, they are re-established in their pots.

I give a sketch of an Auricula-frame which I have found very serviceable in the culture of these plants, and into which I would place them when potted, and indeed this should be their general abode, as this mode of protection and shelter is preferable to frames having air-bricks back and front, sashes,



&c. The Auricula-frame, as will be seen, is very simple in its construction, four main posts as legs upon which to support the whole being the first requisites. A division runs through the whole length, thus forming a north and south aspect for the plants when properly placed. On either of those sides shelves are placed, on which are put the plants in pots. The north side will be found a nice cool place for them in summer, and they will be protected alike from very severe storms, insects, &c.; whilst the south is admirably adapted for them in winter, giving them what is so essential—an atmosphere entirely devoid of the damp at all times contained in glass pits, &c., in winter; besides, every opportunity can be taken of admitting the sun's rays when wanted the most. In this position, too, the stock can be flowered and tended in comfort. It will be readily perceived that the middle partition will be a great assistance to either of the ends we have in view, as the empty space on the north side when the plants are on the opposite shelves in winter, will assist materially, the shutters are being closed, in keeping out the frost; whilst the empty space on the southern side will, in summer, aid materially in keeping the other cool. By simply constructed hinges the roof of either side may be turned over upon the other, thus giving the plants the benefit of a free admission of air when needed, though I would, if constructing another frame, have the roof of glass. The shutters, made to take off and on, may also by a little contrivance, be made the means of breaking too strong a wind, as may be needed.

The propagation of these plants is effected by taking from the old plants offsets sufficiently large to form a cutting.

These should be taken off the plants in May, or as soon as the plants have done flowering, placing them under a hand-glass in a compost similar to that recommended for potting, with, however, in addition, a double quantity of loam. When rooted they are to be potted and treated as advised above. When offsets of any particular variety desired to be propagated cannot be obtained in May, a few may be taken off and struck in August, when the old plants are potted. Great care should, however, be taken that the plants be not too much injured, as wounds upon them at this season are very susceptible of damp, and are, consequently, apt to end in the rot, so much so, indeed, that I would not advise any to attempt the operation who can put it off for a season.

In saving seeds great attention should be paid to selecting good sorts only; by a judicious use of the alpine varieties impregnated with some of our best old sorts, much may yet be done with these quaint plants. No variation in the treatment of the plants is necessary for saving seed. The latter must be watched that it may be secured when ripe.

There are two ways of sowing. The seeds sown about the middle of August in boxes or pans of light earth, generally remain till the spring before germinating, and then come up much earlier than those sown in the spring, and are much stronger and sooner ready for potting. Seedlings are, however, readily raised by keeping the seeds in the pod until February, when they may be sown as above, and placed in a moderately-heated frame, to be potted off when sufficiently large to handle.

In conclusion, taking into consideration the position in which the Auricula grows naturally, the hill sides and mountains of southern Europe, and Switzerland especially, where during the whole of the colder winter months it is covered with a thick coat of snow, we are in possession of the facts that it likes a cool, moist, even temperature, with but moderate light in winter, a perfect drainage—as the hillside position shows—with a free supply of light and moisture, when the return of spring reinvigorates them.

When the plants are perfecting their blooms, care should be taken that wet or damp of any kind does not frequently rest upon them in dull weather.—W. EARLEY, *Digswell*.

THE CLIMBING DEVONIENSIS ROSE.

I HAVE to thank "D., Deal," in his valuable and interesting article on new Roses, for so kindly mentioning my name in connection with the Climbing Devoniensis. Though I have had the pleasure of introducing to the public this truly noble climber, I must disclaim the credit of having fixed the sport. I met with it in the west of England, and imagine its origin to be accidental. Apprehending its probable merits as a climbing Rose I bought what I could of it, and have been proving and, I trust, improving it for the last two years in the rosery here, so that I can now with confidence recommend it as the finest light climbing Rose in cultivation.

From its strong growth of one-year-old wood it will be found a most abundant and early bloomer. My pillar specimens in the open air were so beautiful in the spring that they half-verified dear old Dr. Watts—

"How fair is the Rose, what a beautiful flower!
The glory of April and May!"

for towards the end of May the pillars were clothed with large flowers from top to bottom. Owing to this same vigorous growth its flowers in the autumn are not so numerous, though in this respect I am improving it, and have had many hundreds of fine blooms this year as late as November. When more known and more grown it will, I believe, take precedence of all its fair rivals in the ranks of climbing Roses.—HENRY CURTIS, *Torquay*.

EARLY KING POTATO.—I cannot answer your correspondent of last week, about the Early King. I never grew it, but it is a seedling from the Fluke, and I know it well by sight. "E. H." calls it "a round Potato," but in respect to form, when taken from the soil, it must be judged of as the chameleon is for colour.—UPWARDS AND ONWARDS.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE state of the weather prevents much being done in the open garden. *Asparagus*, if a constant succession is required, a bed should be made every fortnight till the end of March, a slight heat only is necessary. Keep the frames close and cover up well till the shoots make their appearance, when they should have light and air. *Capsicum*, seeds of the various sorts should now be sown in pots, which should be placed in a hotbed. *Cucumbers*, if a seed-bed is made and the dung was previously well prepared, it will be ready to receive the seeds after having stood a few days to let the rank steam pass off; a layer of light sifted soil may then be placed on the surface to the depth of 3 or 4 inches, sow the seed in shallow pans or in pots half filled with leaf mould. After sowing lay a piece of glass on the top of the pan or pot to prevent mice getting at them. *Kidney Beans*, a crop now sown in small pots, and when of a sufficient size planted in a large pit where there is a command of heat, will produce more abundantly than those in pots. The introduction of the red spider into the forcing-house will also be avoided by adopting this plan. *Mushrooms*, beds for early crops should now be made. The horse-droppings must be previously well worked to prevent them from attaining a burning heat. Keep the dung well beaten down at the time of making. *Potatoes*, if it is not convenient to prepare beds for them immediately, plant some in small pots and place them in any corner of the forcing-house, where they can remain until they have made their appearance above ground. They should then be planted out or be placed in a situation where they can receive a sufficiency of light.

FRUIT GARDEN.

Where the means are at command, we would recommend Peach and Nectarine trees to be dressed with the following composition, as well as washing the walls against which they are growing. Scotch snuff, fresh slaked lime, and sulphur vivum, of each 1 lb., mix with soapuds to the consistence of paint, add sufficient soot to make it of a grey colour, and lay on with small paint-brushes.

FLOWER GARDEN.

The planting of large shrubberies on lawns is one of the principal obstacles in the way of beautiful specimens of shrubs, as many choice specimens are planted in them, which in a short time are hidden or killed by the luxuriant-growing sorts. If they are not completely killed they are but skeletons of what they ought to be. To obviate this and still retain the feature of a shrubbery, we would recommend them to be planted singly on the grass at such a distance from each other as to allow of their showing their proper character. A hole may be dug and suitable soil put in for each plant if necessary. The turf should then be laid down nearly close to them, leaving only a small circle round each. This effect may be given without disturbing the roots by digging or crowding the shrubs so much as to mar the beauty of each individual species.

GREENHOUSE AND CONSERVATORY.

The continuance of wintry weather will not allow of any essential variation of treatment here. The precautions previously recommended in regard to the necessity of allowing exterior influences to govern, in a measure, the temperature within the houses must be insisted on. Should high winds prevail, little air need be admitted. Few of our glass houses are so constructed as totally to exclude air; aided by the pressure of strong currents it will be insinuated through every crack and crevice, and the necessity of admitting it by other means obviated, at the same time more fire heat is required to preserve the requisite temperature of 50°, which is ample, while the thermometer indicates so low a degree of cold outside. *Cinerarias* and *Calceolarias* will require a liberal supply of water, and, possibly, increased pot room. *Pelargoniums* to be cautiously encouraged to activity. The mould intended for greenhouse plants should be prepared and sweetened by several turnings, and a sufficient supply for immediate use should be stored in an open shed. In the conservatory, *Kennedya*, &c., will be showing bloom, and what training they require should be done at once, but the pruning of these should not take place until after blooming. When Orange trees are grown to decorate the flower garden in

summer, care should be taken to prevent their beginning to grow previous to their removal to the open air, and more especially if the trees are wintered in a dark-roofed house. Turn all greenhouse plants frequently to prevent them growing one-sided, and see that no decayed leaves are allowed to remain on them.

STOVE.

Give as little moisture here as possible, and do not aim at high temperature, the colour and durability of flowers will show how injurious both are in excess at this period. When such plants as *Aphelandras*, *Justicias*, *Poinsettias*, and other winter-flowering sorts have done blooming they should be removed to a drier atmosphere, and water gradually withheld to effect the proper ripening of their wood. With stove climbers not required to bloom before the autumn, pruning may be deferred for some time yet, which for an earlier show should be done at once. *Passion-Flowers*, *Bignonias*, and similar plants, which make long annual shoots, should only have the wood thinned, and slightly shortened, while some others, as *Combretum*, *Beaumontia*, &c., may be spurred-in. Much depends on the space allowed for their growth. A portion of the stock of *Achimenes*, *Gesneras*, and *Gloxinias*, may now be potted in light mould, and placed in gentle warmth. Some of the *Gesnera zebrina* which were first in flower, should soon be induced to rest for early work next autumn. This is easily done by withholding water, and keeping their foliage still exposed to the light. Such of the *Orchids* as are commencing growth, if very dry, may have a little water applied to the roots, this must be done cautiously. The best way is to apply it round the sides of the pot, and by no means to saturate the soil around the collar. Lose not a moment in exterminating insects.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

OUT-OF-DOOR work very much depended on the weather. Wheeled chiefly from rubbish-heap in frosty days and mornings. Collected a little more ice to make more sure. Trenched and turned over previously ridged ground, to give it the benefit of the pulverising effect of a good frost, and protected what needed protection; but Nature has given us the best of all protection in the shape of a good fall of snow, which, besides keeping things safe in the meantime, will help greatly when it melts to fill our pools and tanks for next season. For the mode of collecting snow instead of ice see a previous Number. In the Mushroom-house introduced more *Rhubarb* and *Sea-kale*, and a number of *Potatoes* in small pots, to fill the pots with roots before transplanting. Cleaned and examined Mushroom-beds, keeping the house cool, as we do not wish for a great supply just now. To make the most of a garden, and to allow the gardener to do the best with his productions, he ought to know of all changes as to company as soon or even sooner than the cook and the housekeeper. When gardeners are kept in the dark as to these matters, the possessors of gardens must expect a glut of rarities when they value them least, and a deficiency of them just when they would value them most.

Put up some beds for *Potatoes*, but the weather has prevented us planting them. Gave light and air, except on snowy days, to *Radishes*, *Lettuces*, and *Caniflowers*. When cold and dull, and especially when snowing, the plants will sustain no injury if in darkness for several days and nights, instead of one night only. The great rule of safety in such cases is simply to make sure that the plants shut up are too cold to grow, for growing even by extension in such continued darkness would be ruinous.

We recollect being told of a case in point by the late Mr. Weeks, sen., the great mechanist, to whom we are chiefly indebted for most of the improvements in heating by hot water. In his younger days he had been a practical gardener, and about New-year's time he had a pit or frame of fine *Cucumbers*, we forget which now, but heated and banked up with fermenting material. Some neighbouring gardeners called on him on New-year's day, ostensibly to see him, but in reality to get "a wrinkle" about these *Cucumbers*. It was a very cold, frosty, snowy day, and the covering had been merely rolled down a little to let the visitors see the

inside. Some of them stared, and better stared, and winked at each other as they pointed to the covering, thinking that in this they had discovered the secret; and without asking a single question as to the covering, went home to cover their *Cucumber* plants into disease, insect harbours, and ultimate death. We think we can see the old worthy before us now as he chuckled and told the tale, always concluding with the observation, "You know I would have been too glad to tell them that such darkness in any amount of light was an exceptional case, only warranted by the peculiar circumstances; but as they were too proud to do anything but look, I also was proud enough to withhold any explanation, merely because it was not asked for." Amid the excitement of the present we are apt to forget the worthies and the original geniuses to whom we owe much. We thence learned the lesson never to refrain from politely making inquiry on all suitable occasions; and that, therefore, to walk round a garden and do nothing more than look, and thus find nothing on which to ground an inquiry or express admiration, is not the plan to give pleasure to the gardener visited, nor yet the means for gaining a personal advantage from the visit. As the result of some experience we confidently state that the smallest garden visited may well afford instruction, and in some cases even more than some palatial residences, where we are apt to be overwhelmed with the gorgeous and the brilliant. In no case will we be likely to gain much if we are too stolid to observe, or, like Mr. Weeks's visitors, merely look, and wink, and say nothing.

FRUIT GARDEN.

Looked over fruit-room. Moved *Strawberry* plants in bloom in the pit to the best part for light and air. Damped *Vines* in early house in sunny days; also gave a sprinkling in such days to the early *Peaches* to soften the point of clay and sulphur in which the buds are encased. Those who have *Peaches* in bloom just now in this dull weather must use every means of getting the fruit set, such as giving them the advantage of every ray of light, and either dusting the pollen on the stigma by means of a camel-hair brush, or by using a flat thin board for quickly moving backwards and forwards near the trees in the way of a fan. This we consider far preferable in such dull shifty weather to making large fires so as to heat the house sufficiently to admit of great quantities of air.

Air-giving is a matter of much moment in all cases of early forcing, both as respects success and economy. There is not only the expense of firing during the day, to permit of free air-giving in severe cold weather, but there is the danger of having an extra heat in the heating medium increased by a sudden outburst of sun, and the two heats combining with a dry, cold, parching air rob the young growth of its moisture, and the evaporation is apt to become so great and rapid that the action of the roots is unable to supply it. In such changeable weather it is better to give only a little air at the top of the house early, and then to keep up no more artificial heat than will just keep all going on quietly, and then if the sun do come out a considerable rise from sun heat will have none of the bad effects which heat from artificial sources would entail, unless counterbalanced by this wasteful and dangerous free air-giving. Thus suppose in such weather as this, stormy and frosty, a house of *Peaches* setting and in bloom, we would be satisfied with from 50° to 55° at night. If the morning augured a dull cold day, we would put on a small fire, so as to raise the temperature to about 60°, with a very little air at the highest point of the roof, just to prevent stagnation in the atmosphere. If the morning promised a sunny day, then we would put on no fire, wait until the sun raised the heat to from 60° to 65°, then give a little air at the top, and only increase it when the heat from the sun rose above 75°. A close heat at that degree and upwards would be dangerous, but it would be relished from sun heat, and especially when a little air was previously given to prevent all danger of scorching or scalding, and thus the danger on cold days would be very much less than by admitting a great amount of cold frosty air. Of course when the temperature outside approaches what the inside temperature ought to be air may be given very freely. We only wish it to be clearly understood that for tender things, and in such changeable weather, it will be best every way only to give a little air at the right time—that is, early, and then to regulate the

temperature considerably by the heating medium, bearing in mind that the higher forms of vegetable life cannot healthily conduct their successive developments unless the heat they receive is proportioned to the light they enjoy.

In sunny days it is also important to shut up early in the afternoon, as the heat from the sun with its electrical action will be more valuable than a later free circulation of air, which from its very coldness would prevent the sun from exerting its salutary power. In thus shutting up early, say from two to three o'clock, two things must be guarded against—first, the not making the house too hot, even with sun heat enclosed, which is all the more particularly to be guarded against if the roof is close-glazed; and secondly, so to proportion the action of the fire heat that it would just begin to act as the heat from natural causes had descended to the point of safety. As to shutting up close at all, we merely allude to it as a matter of economy in fuel, which many of us must make a first consideration even now, after all the advantages from railways. But for that, in all close-glazed roofs we would rather have little openings at the ridge of the house continuously night and day. It is amazing how effective even half-inch openings in width are in preventing stagnation of air, or scalding or scorching, when it gets hot.

We recollect some years ago seeing a fine example of prudent forethought in a friend whose garden we visited in early spring. It had been a fine sunny day, though the air was cold behind the sun, and the houses where a high temperature had to be maintained, were shut up early. We entered a Cucumber-house early in the afternoon, and were forced at first to run out again, the heat was so excessive. By a mistake the valve connecting the Cucumber-house with a powerful boiler had been opened, and the pipes were near enough the boiling-point to prevent the hand touching them. At once the valve was reversed, the paths slushed with water, the beds and the leaves of the plants syringed, the latter on their underside, and small openings made for the escape of the heated air at the ridge. The man in charge, finding the mistake, was throwing open bottom and top ventilators with the greatest freedom; and we have no doubt if that course had been followed even for a short time, the sides of the best leaves would have been found scorched next day, while from the treatment adopted there was little or no damage done. In such a case it would have been quite time enough to have let the pipes get sensibly warm by four o'clock, and then increased the heat gradually as the sun heat lost its power.

What has been said above as to Peaches will also refer to Vines and other fruit trees. Early Vines with the bunches in bloom might as well be trusted over in a sunny hour, though for setting purposes nothing is better than drawing a dry hand gently along the bunch, so as to scatter the pollen, and relieve the top of the pistil of its cap-like hood in the shape of the calyx of the flower.

ORNAMENTAL GARDEN.

We have been considerably hindered with some ornamental planting, &c., owing to the frost and snow. That is of little consequence in a garden where the men can be easily changed, but it is often a very serious thing with those who contract for planting. Those engaged in planting for timber and cover got on pretty well except when the snow was in the way, as the holes could be made in frosty mornings and days, and the planting proceeded with when it was dry and fine; and the ground being just moist and not wet, the trees or plants were planted in first-rate condition. After very heavy snows or rains it would often be economy to wait a day or two until the ground had become more kindly, as neither a tree nor a Cottage plant is likely to succeed any better when the mud and water keep spurting about the workman's shoes.

Mahonia (*Berberis aquifolium*).—Allow us here to express our best thanks to those friends, and especially those personally unknown to us, who have given us their experience with this useful sub-evergreen. Most of these friends, however, leave the matter as to the plant being untouched with hares and rabbits somewhat in doubt. Perhaps the most important communication received is from a well-known gardener of great experience; but as we have not had time to consult him as to our using his name publicly, we will

here give part of his communication under the initials of "J. M." Our friend says:—

"About six years ago we commenced planting rather extensively for under-cover, and amongst other things used was a quantity of *Mahonia aquifolium*, chiefly planted at short intervals by the sides of the rides, the intention being to secure both utility and ornament. Contrary, however, to my expectation, they have been almost totally destroyed, and I noticed to-day, that where a single plant was to be found, the leaves were much nibbled, and left on the ground; but, as in your case, I consider the plants were rather small for thus planting in woods where rabbits abound. In another part of this estate, we planted three years ago a few large plants, all of which have done well, although there are plenty of rabbits to be found near them. My opinion is, that when *Mahonias* are to be planted for cover, plants of considerable size and strength should be used; for then although rabbits, &c., might nibble the outside leaves, they would not be so likely to cut the plants totally down. Of course, such larger plants would be higher in price, but then a less number would be required, and I believe the ultimate result would be more satisfactory. If this plan of larger plants is not adopted the rabbits, &c., should be kept down on the fresh-planted piece until the plants are established. After that the rabbits will soon become numerous enough, as soon as the plants are established. At any rate here, where rabbits, &c., are so numerous, I find it almost useless to plant any underwood when the plants are small and young. Dressing large quantities of such plants with any sort of mixture, is not only a very tedious work, but one which is seldom followed with sufficiently satisfactory results."

We have no doubt there is much in what our friend says, as to the size and strength of the plants; but then, on the other hand, young, stubby plants, if left alone, are apt to make fresh growth better than older stunted plants.

Flower Seeds, Vegetable Seeds, &c.—Took the opportunity of a sunny day, to get a few of these properly cleaned and put away ready for use. Unless labour is very abundant, or where there is a particular pleasure in attending to all these minutiae, as in the case of amateurs, there is little or no advantage in doing much of this sort of work in private gardens, as by the division of labour the regular seed growers and merchants can do it more economically and satisfactorily. Amongst the wonders of the age, is the price at which our leading seedsmen send out their seeds, so nicely done up, and the specific practical directions accompanying each packet, or in the catalogue which will generally accompany the order. "Live and let live," is not only philanthropic and benevolent, but it insures true thrifty-paced economy. The saving of seeds should in general be chiefly confined to scarce and rare articles, or to superior varieties of some common plants, and for the pleasure of distributing them to those whose circumstances will not enable them to purchase, even at the cheapest rates. The saving of such seeds amongst cottagers too, leads to habits of carefulness and industry—great desiderata among the children, altogether independent of the money-value of the seeds. "Can do is easily carried about." So it is, and a "Jack of all trades" is no doubt often a very clever fellow, a man who would take a first place as an emigrant in the back woods, and yet who may find it difficult to earn his bread in this land of competition and division of labour. Even the most pleasant and agreeable hobby and pursuit may be ridden too hard to be judged by the stern maxims of economy. We have frequently known first-rate mechanics, we might almost say artists, so fine and cunning was their workmanship, and so handsomely paid were they for their labour, who were so fond of their large gardens, that they would be doing something in them in the early morn and in the dewy eve, and thus securing the means for personal health and the gratification of their tastes, as well as imparting advantage every way to their family. All right and proper, but was it equally right and proper for such men, often at much loss to their employers, to take several days in the busy season to do the rough of the gardening work themselves, when even with all their energy they could not manage to do quite as much as the jobbing gardener, who would have been well pleased with half of the money which the mechanic would have earned at his usual avocation? In such cases it is not

all gold that glitters, and "a penny saved is not a penny gained," when the saving involves the loss of gaining two or three pence.

Potting.—Proceeded with shifting bedding plants, greenhouse plants, and stove plants as opportunities offered, and amongst the stove plants set some *Caladiums*, that had stood in a dryish warm corner with some damp moss over them, into a bed with some bottom heat just to start them into growth, when fresh potting can be given them. We have also potted a quantity of last year's *Fuchsias*, and in a different way from what we generally do, because it suited our circumstances as to room better. Generally we prune the plants, and let them break in the old pots before we remove part, at least, of the old soil, and put into fresh. In the present case it was an object that the pots should occupy as little room as possible, and therefore the plants were roughly pruned, turned out of the pots, and the old soil shaken from the roots; the soil being rather dry, the roots were then set for ten minutes or so in shallow warm water, about 70°, just to moisten them, and then allowed to drip before they were placed in light fresh soil and into much smaller pots, which were placed in a temperature not below 45°. When the pots are filled with roots the plants will get more pot-room. The heads will be damped from a syringe, especially in sunny days, but the soil will receive little water until the fresh young roots are working freely in it. Where very fine plants are wanted in bloom early, a little bottom heat will be a great advantage at first, and manure waterings as soon as the flowering pots are filled with roots.

In this dull weather a coolish temperature is the best security against weak growths and insects. Spare the coal heap, and you will be able to spare the tobacco smoke.

—R. F.

COVENT GARDEN MARKET.—JANUARY 28.

In consequence of the severity of the weather supplies are short, but the demand at this season being far from brisk, quotations are nearly the same as last week. Forced Asparagus is hardly to be had; Apples are still plentiful; and dessert Pears consist of the same varieties as enumerated last week.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	2	0	Melons.....	0	0	0	0
Apricots.....	0	0	0	0	Mulberries....	0	0	0	0
Cherries.....	0	0	0	0	Nectarines.....	0	0	0	0
Chestnuts.....	14	0	20	0	Oranges.....	5	0	10	0
Currants, Red.....	0	0	0	0	Peaches.....	0	0	0	0
Black.....	0	0	0	0	Pears (kitchen)...	5	0	10	0
Figs.....	0	0	0	0	dessert.....	3	0	6	0
Filberts.....	100	40	60	0	Pine Apples.....	6	0	9	0
Cobs.....	70	0	80	0	Plums.....	0	0	0	0
Gooseberries.....	0	0	0	0	Pomegranates.....	0	6	1	0
Grapes, Hamburgs lb	3	0	8	0	Quinces.....	0	0	0	0
Muscats.....	6	0	10	0	Raspberries.....	0	0	0	0
Lemons.....	100	5	0	10	Walnuts.....	14	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	0	0	0	0	Leeks.....	0	2	0	3
Asparagus.....	10	0	15	0	Lettuce.....	2	0	4	0
Beans Broad.....	0	0	0	0	Mushrooms.....	1	6	2	6
Kidney.....	2	6	5	0	Mixed. & Cress, punnet	0	2	0	0
Beet, Red.....	1	0	3	0	Onions.....	5	0	7	0
Broccoli.....	1	0	3	0	pickling.....	0	6	0	0
Brussels Sprouts.....	2	6	3	6	Parsley.....	4	0	6	0
Cabbage.....	1	6	3	0	Parsnips.....	0	9	1	0
Capecums.....	100	0	0	0	Peas.....	0	0	0	0
Carrots.....	0	5	0	8	Potatoes.....	2	6	4	0
Cauliflower.....	2	0	6	0	Radiishes.....	0	9	1	0
Celery.....	1	0	2	0	Rhubarb.....	0	6	1	0
Cucumbers.....	1	6	3	0	Savoy.....	1	0	2	6
Endive.....	2	6	3	0	Sea-kale.....	1	6	3	0
Fennel.....	0	3	0	0	Spinach.....	3	0	5	0
Garlic and Shallots, lb.	0	8	0	0	Tomatoes.....	0	0	0	0
Herbs.....	0	3	0	0	Turnips.....	0	3	0	6
Horseradish.....	2	6	4	0	Vegetable Marrows.....	0	0	0	0

TRADE CATALOGUES RECEIVED.

Barr & Sugden, 12, King Street, Covent Garden, London.
—*Compendium of Illustrated Guides to the Flower and Kitchen Gardens.*

Wheeler & Sons, Gloucester.—*Wheeler's Little Book, or Select Seed List.*

Edward Taylor, Malton.—*Descriptive Priced List of Fruit, Forest, and Ornamental Trees, Shrubs, &c.; Catalogue of Agricultural, Kitchen Garden and Flower Seeds.*

Butler & McCulloch, Covent Garden, London.—*Spring Catalogue of Seeds for the Kitchen Garden and Flower Garden.*

Austin & McAlan, 16, Buchanan Street, Glasgow.—*Catalogue of Choice Vegetable and Flower Seeds.*

R. Smith, Worcester.—*Seed List; List of Plants of the Fir Tribe Suitable for the Climate of Great Britain.*

TO CORRESPONDENTS.

** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

PANDANUS JAVANICUS VARIEGATUS AND STEPHANOTIS FLORIBUNDA CULTURE (J. L.).—If you have the convenience of a hotbed you may plunge them in it after potting them, or place them in an increased temperature in March, which is what, we presume, you mean by starting them. If the plants are healthy this is quite unnecessary. The structure in which they are grown being a stove, will be increased in temperature as the season advances; 55° to 60° being the minimum winter temperature, increase it to 60° in March, and increase to 65° or 70° in May. Pot them in the first week in March, the *Pandanus* in a compost of turfy loam two-thirds, leaf mould one-third, with a little sharp sand added; the *Stephanotis* in a compost of turfy sandy peat two-thirds, and one-third leaf mould or turfy loam, the latter in preference to the former. Add a little sand and drain well. The flowering depends on obtaining a free growth, and then well ripening the wood by a free exposure to light and a drier atmosphere, with abundance of air. The beauty of the *Pandanus* is its foliage, it being of no value on account of its flowers; the *Stephanotis*, on the other hand, is one of the sweetest and most beautiful of stove climbers.

POTTING FUCHSIAS AND PELARGONIUMS (J. B., Yorkshire).—Pot the *Fuchsias* in February, removing as much of the old soil as possible without injuring the roots, and place in the same sized pots, or a size less if such will hold the roots comfortably. Shift them into large pots when the pots become well filled with roots, transferring them to their blooming-pots (12-inch will be large enough), in the latter part of April or beginning of May. When the plants break out them in, so as to form an even-shaped plant, and when the shoots have made 3 inches' growth, take out the points of them. Continue the stopping, thinning, or otherwise regulating the shoots, so as to have an even-headed specimen, stopping for the last time in the beginning of June. If the plants are very vigorous they may be stopped until the middle of June, when they will mostly bloom in six or eight weeks afterwards. The *Pelargoniums* should be potted now into a larger size, and they should have their last shift in March. You will keep them close-stopped up to May to two or three joints, and afterwards tie out the shoots. They will most likely bloom at the time wished, but the bloom of *Pelargoniums* at that season is not so good as earlier in the season. We are obliged by your experience, affording us additional proof that our labours have not been in vain, and that our Journal is welcomed by all classes. You are indeed a veritable cottage gardener, and we gladly wish you prosperity. You ought to receive *THE JOURNAL OF HORTICULTURE* on the day of publication, or next day at latest.

HEADING-DOWN ELM TREES (A Subscriber).—If the trees have room we would let well alone. If too crowded you might either remove or head a part of them. We are not sure if we thoroughly understand your case.

PACKING ICE (H. C.).—In a small house we would make the straw into bundles and pack round the sides. If the house is of a fair size, and more especially if it have double walls, we would have no straw. As soon as the straw is wet it does more harm than good. Could you keep it dry it would be different.

PROTECTING PEACH BLOSSOMS (D. M.).—We have found canvas the best protection when it was let down at night and drawn up by day, and that sort of canvas known as tiffany we like best. Woollen netting with quarter-inch mesh is to be preferred when the days are cold, and it is then desirable to leave the covering on all night, it, like canvas, being taken off or drawn up on fine days and during mild weather. It is an excellent protection. A double covering of half-inch twine netting is also a good protection, and Spruce branches are sometimes used when nothing better can be had. Protecting materials can be had from most nurserymen at the price it is sold by the manufacturers, but we never recommend dealers.

PEACH BUDS FALLING (A Perplexed One).—We can only account for the buds falling through imperfect maturation of the wood, and that may have been occasioned through a deficiency of light by the shoots being too far from the glass, or shaded, a deficiency of water at the root, and also of atmospheric moisture, or the leaves may have been exhausted by attacks of red spider, and it may be the soil has been too dry during the season of rest. Their doing so well at the warmest end of the house sustains the opinion that the non-ripening of the wood is the cause of the buds falling in this part most distant from the fire.

FIGUS ELASTICA—COMPOST FOR VINES (E. Webb).—Pot the Vines in March in turfy loam two-thirds, leaf mould one-third, with the addition of sharp sand. Pot the Vines forthwith in a compost of turfy loam, using it rather rough. Water with liquid manure at every alternate watering. Be sure and drain the pots well. Twelve-inch pots will not be too large.

DRACHMA COOPERI LEAVES BROWNED (T. T.).—The probable cause is a deficiency of roots or a sour state of the soil. The plant is unhealthy, and that we have no doubt is occasioned by an inactive state of the roots. Repot, draining well, and plunge in a hotbed, and it will form leaves all right after a healthy root-action has commenced. Dryness is not a likely cause, but constantly syringing the leaves often causes these to die off at their extremities. Undue excitement also, or keeping the plant constantly growing, is a common cause of defective leaf-formation, but it is mostly for want of roots that the leaves go off in the manner yours are doing. The article on hybridising relates to any plant, and that on *Disa grandiflora* we think gives its culture, or relates to it, but we do not undertake to furnish that which can be readily obtained by a reference to our pages.

GERANIUM SEED SOWING—CINERARIAS TO BLOOM AT MICHAELMAS (Geranium).—The seed of the first sown early will not bloom, or but imperfectly, the same season. Cineraria seed to furnish plants for blooming at Michaelmas should be sown early in March.

REMOVED ARBOR-VITAE (S. M. L.).—They will require no stimulants. Moleh the surface of the soil over the roots to keep out frost now and drought in summer.

TRAINING FOR A GARDENER (Thankful).—Having made so much progress, and you being able to manage a garden so successfully, why not employ the lad under your own direction? After a year or two of such instruction place him under the head gardener of some gentleman's garden for a similar period, by which time he would be qualified for an under-gardener's situation, or even the management of a small garden.

BOOK (J. G.).—The best edition of "Withering's British Flora" was published in four volumes by his son in 1830. Mr. Macgillivray edited an edition in one volume; also one of Smith's "Introduction to Botany."

ANOTHER WILTSHIRE RECTOR.—If you will send us a sealed stamped letter, undirected, we shall very willingly forward it to the gentleman you mention.

BOUGAINVILLEA SPECIOSA AND LAPAGERIA ROSEA CULTURE (C. M. Major) Pot the Bougainvillea in March, in a nine-inch pot, in a compost of turfy loam two-thirds, and leaf mould one-third, with a free admixture of sand, and grow on in a warm greenhouse, watering copiously up to the middle of August, then gradually withhold the supply, and expose the shoots to the full sun, and admit abundance of air. It should not be crowded by other plants at any stage, but have light on all sides. Keep the soil dry during the winter, but not so as to kill it. Its flowering depends on the well ripening of the wood. Another season employ a 12-inch pot. Pot the Lapageria in a 12-inch pot in a compost of turfy peat two-thirds, and one-third turfy loam, using both rough, yet in a broken state. Drain the pot to one-third its depth, and the drainage must be perfect. Train on a trellis, and if it have the northern side of a span-roof, such is to be preferred; but a situation where it receives a full light, yet not the direct rays of the sun, will do. A cool airy structure is to be preferred, and one kept at 40° or 45° in winter. Give water every day, so as to make it show itself at the drainage, whilst the plant is in flower and growing, and syringe occasionally, keeping a moist but well ventilated atmosphere. At all times the soil should be kept wet, but doubt the quantity of water should be given when the plant is growing and flowering. Take care of the long and strong shoots, as from these the flowers are usually produced.

TRAPAZIUM TRICOLOR AND VALLOTA PURPUREA CULTURE (Yorkshire).—Pot the tubers in 6 or 8-inch pots according to their size. If very small 4½-inch pots will do. Drain the pots well, and fill to half their depth with turfy loam half, and leaf mould or peat the other half. On this place the tuber, and when it pushes earth the shoot up as it grows, twisting it about in the pot taking care not to break it. In this way bring the soil to within half an inch of the pot rim. Water sparingly and only when necessary, at the same time keeping the soil healthfully moist. It will do well in a greenhouse in a light airy situation, if only frost be excluded. Pot the Scarborough Lily (*Vallota purpurea*) in a pot double the diameter of the bulb, in a compost of turfy loam with a little leaf mould added. Grow in a light airy situation in the greenhouse, watering sparingly at first, but copiously after growth commences. In winter water less, and give all the light possible.

CLIMBERS FOR HOUSE-FRONT—BAYS AND LAURUSTINUS (A Young Gardener).—*Wistaria sinensis*, *Aristolochia alpinum*, *Bignonia radicans*, *Passiflora corallina*, *Pyracantha*, *Magnolia grandiflora*, also the Exmouth variety, *Lonicera brachyotcha aureo-reticulata*, *Clematis lanuginosa*, *C. azurea*, *Jasminum nudiflorum*, and *J. officinale*. The Bays and Laurustinus should be fresh top-dressed in spring by removing a quantity of the old soil, as much as possible, and replacing it with fresh. It will not be necessary to put them in fresh tubs until the tubs are worn out, only they must be top-dressed and kept well watered. Both being rather tender, they should have a sheltered situation in winter. A good Rose for a wire is Blairii No. 2, Hybrid China. Gloire de Dijon is excellent.

CAMPYLOBOTRIS REGALIS AND REFULGENS CULTURE (M. R.).—They require the temperature of a warm stove more close than for the majority of stove plants. The temperature should not be less than 60° by night at this season, one of 70° or 75° at night in summer being necessary to secure a free growth. Pot them in turfy sandy peat two-thirds, turfy loam one-third, adding a free admixture of silver sand. Drain the pots effectually, using a moderate-sized pot at first, shifting into a larger as the small one is well filled with roots. Water sparingly, only keeping the soil just moist until growth fairly commences, then water more freely, but only when necessary. Place in a constantly moist atmosphere, and about 5° warmer than that of the stove generally. The secret of success rests in keeping up a close regularly humid atmosphere, but, at the same time, a sweet one. They are very impatient of water on the leaves, and should not therefore be syringed overhead. If you have no convenience beyond a regular stove, you will grow these plants best by having a frame made sufficiently large and deep to hold the plants, standing the pots on sand or gravel—better still, plunging them to the rim in sawdust or some such material. In this position a regular moist atmosphere will be secured, and they can have air by tilting the light, and this without any fear of sudden changes, which are the bane of the plants. Success in the cultivation of these plants lies in maintaining a healthy root-action, and in keeping all about them sweet and clean, being careful to avoid sudden changes of temperature—an atmosphere at one time humid, at another dry, at one time close and stagnant, whilst at another it is airy, and the atmosphere made cold or dry by admittance of air. A rather close, and rather warmer atmosphere than that accorded to stove plants generally, is just what suits these, and almost all the fine-foliated plants.

FLOWER-GARDEN PLAN (E. W.).—We never undertake planting. All that we can do is to criticise planting submitted to our judgment.

FERN MANUAL (G. G.).—It contains what you mention. The drawings were copied from live specimens.

DESTROYING WOODLICK (C. I., Oxon).—When these pests are allowed to increase extensively they are very difficult to subdue. If it is not possible to introduce boiling water into the haunts of the woodlice, the most effectual way will be to raise the framework and destroy all of them that you possibly can; and then scrape away all the loose mortar, and bed the wood-work firmly down on to a layer of Portland or Roman cement, so that every crevice may be filled up and defy their making use of such a retreat. To destroy the stragglers that may have taken up their quarters inside the frame, boiling water may be applied to the inside of the walls, on which they are generally found creeping after dark. Poisoned fruit, such as Pears or Peaches, laid in the frame at night will also destroy them, as they are fond of feasting on fruit. Toads are great enemies to them, and one or two such lodgers will make short work of great numbers of them. Any or all of these remedies will enable you to overcome your marauders.

NAMES OF FRUIT (J. Rust).—Your Pear is La Julie.

NAMES OF PLANTS (S. Edwards).—1, *Blechnum spicant*; 2, *Ceterach officinarum*; 3, *Asplenium Ruta-muraria*; 4, Specimen too imperfect. Any bookseller can inform you about the monthly magazines you name. (*H. M.*). —1, *Asplenium bulbiferum*; 2, *Asplenium lucidum*; 3, *Phlebodium areolatum*; 4, *Doodia*, or *Woodwardia caudata*; 5, *Platyloia falcatum*; 6, *Polystichum vestitum*; 7, *Adiantum formosum*; 8, *Selaginella Galeottii*; 9, *Adiantum reniforme*. (*J. B. H.*).—It is *Poinsettia pulcherrima*, a native of Mexico. (*J. C. Mundell*).—1, *Genura zebrina*; 2, *Begonia argyrostigma*; 3, A *Begonia* which we cannot name from the specimen sent; 4, *Scricographis polita*; 5, *Calanthe vestita*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

JOINT-STOCK POULTRY COMPANY.

THERE is generally at this time of year a desire among those who think of the question to undertake matters on a large scale. So many schemes are afoot—some, we believe, going so far as to talk of a "Poultry Company, Limited," that we think we shall be doing well by touching on the subject. We have heard of one association or company seeking a hundred acres of light land in order to begin operations directly. We wish them every success, but we do not think it possible. The expenses would eat up all the produce. There is no doubt that a large supply of good poultry in the spring of the year would realise a great sum of money. It is no uncommon thing for young fowls properly fattened and killed to average £3 per dozen for weeks between the middle of April and beginning of July. It is a tempting sum, and soon runs into large figures; but it is also the most difficult season at which to produce them, and hence the price. Birds of equal or greater merit in the autumn and winter will make only half the sum. We believe in profitable poultry-keeping on a comparatively small scale, with new-laid eggs for sale at 4d. each during the winter, and a dozen fattened chickens per week during the spring. These in most localities and at all farms may be kept without involving any real extra expense. The return is for the small outlay of food, and a larger item of trouble and painstaking. We have been advocates for years for everything that would increase our spring supply of good poultry. It is needed; but the trouble and difficulty are so great, we believe we have made few converts among those who have the time and opportunity to follow our suggestions.

We believe the poultry raised in our rural districts might be easily and profitably doubled. It admits of easy explanation. Small land-holders who now fatten six dozen might as easily fatten eighteen. They have the conveniences at their homesteads of roosting-places, they grow the food, and they understand the question; yet even to these the remuneration does not appear sufficient to tempt them to enlarge their dealings. Profitable poultry must be produced in the scarce season. Chickens to be ready for the market in May must be hatched in December or January. It is difficult to get eggs then, still more so to find sitting hens. We know persons who have hundreds of fowls, and who have not yet had a broody hen this year. To breed profitably there must be a succession of fattened poultry to come day by day to the market. The process, then, of hatching, should begin in November and continue uninterruptedly. To lose a week would be to lose an advantage that could not be regained till the next year. The supply of poultry is like that of peas, fruit, &c., in the early spring. It is forced, and one is as artificial as the other. The outlay would be too great. Land to rent, houses to build, food to buy, man

to pay, carriage to London, commission on sales—these would all be heavy items, many of which are possessed without outlay by those who still decline to undertake poultry on a large scale. The truth is it is almost impossible, and hence the fact that there is in England hardly a person who lives exclusively by breeding it. Where fowls are kept in very large numbers they are very subject to disease. This disease spreads, and profit disappears.

Egg-selling in winter pays if you can insure a ready sale for new ones at a good price; and those that are laid in summer compensate in numbers for the diminution in price. In both respects we consider poultry as a valuable auxiliary to any one, and quite capable of considerably increasing a small income. We do not consider it a pursuit by which a living may be gained.

Many, some of them most valuable correspondents, have asked our opinion on the above questions. We have known no better mode of answering than by putting our practical opinions in the above shape.

VISIT TO "Y. B. A. Z."

HAVING received, through the pages of this Journal, a courteous invitation from this now well-known writer upon poultry, to pay him a visit, I willingly accepted the kindness offered. I the more readily accepted the invitation because "Y. B. A. Z." promised to show me some Malays of such breed and beauty, as would either change, or greatly modify my opinion concerning this kind of fowl. I had written somewhat severely concerning the Malays exhibited at the Bath and West of England Show, and I was quite anxious to see some which I might like, for I am too fond of all kinds of fowls to have a prejudice against any one breed. This feeling adds greatly to one's enjoyment of a poultry show. I sometimes notice people anxiously pressing onward to see this or that sort of fowl, but passing by and not caring for any others. For my part I see so many and such varied beauties in the different kinds both of fowls and Pigeons, that I can pause at every pen. Local prejudices, or class prejudices, narrow the mind, and not only so but prevent much enjoyment.

A visit to "Y. B. A. Z.," the gallant defender of Brahmas, the criticiser of schedules. "But now tell me," whispers an inquisitive one, "Who is 'Y. B. A. Z.'?" "Do the four letters stand for a lady? if so, is she married or single, short or tall, dark or fair?" "Or do they stand for a gentleman?" Well, I may say this much, that the said four letters have in print owned themselves to be of the masculine gender, when not long ago they talked of doing battle with pistols. "Oh! but do tell me more?" "Alas! Miss Curiosity, certainly not."

"You have a vision of your own;

Ah! why should I undo it?"

I had my vision, my dream, my imagination. I looked at the letters, looked again, then broke out triumphantly, "I have it, he is a Persian gentleman, remove the periods between the letters, and have but one capital, and the oriental name comes out plainly enough. "Ybaz," perhaps a merchant from Shiraz, or from the vale of Cashmere, he will quote the poems of Hafiz, not of Hood. Then is there not further evidence he is devoted to Brahmas, they are Eastern fowls at any rate, whether from Birmah or China, upon this point I give no opinion, valuing a skin unriddled by pistol bullets. Doubtless, I shall find "Ybaz" wearing a high sugarloaf hat, possibly the whole Persian costume. I hope at any rate, he will not insist upon my worshipping the sun, as that would be awkward if it came to the ear of my Bishop. Well—

"I had a vision of my own.
But, oh! time it did undo it."

Luckily Ybaz resides in England, I am to meet him at a certain railway station, and hold up a copy of "our Journal" in my hand as a flag of recognition. The ticket is taken, the journey is over, the said (or rather unsaid) station is reached, the flag exhibited and recognised. Ybaz does not wear a high hat; in short my hand in a moment is in the warm grasp of a thorough Englishman. We are friends at once. "There is the bond," exclaimed Ybaz, pointing to our Journal.

I am not permitted to see the Malays until I am hunched. Hospitable and wise Ybaz, "a hungry man is an angry man," I shall look more kindly at your Malays, because the gnawing pains of hunger are appeased.

Now, be it known, that the Malays kept by Ybaz, are not Pheasant Malays, as were those shown at Clifton, which I am inclined to think are an inferior variety, but his are the older kind. Says "The Poultry-Book for the Many," "there is more difference in the appearance of the various specimens of this breed, than in those of any other breed." Among the best-looking are Ybaz's. They are of Mr. Ballance's strain, so naturally the balance is in their favour.

I would sum up in regard to Malays thus. They are an old and very distinct breed; much loved by our ancestors; kept years ago by that veteran in natural history, Mr. Waterton, and although as Mr. Bailly puts it, "they have fallen before the spirit of utility," yet it is well that the best of this breed should be kept, and that there is a certain beauty in such as those possessed by Ybaz no candid person can deny. I hope amateurs who have means will keep up the breed.

I pass on from Ybaz's Malays to his Polish. These were Silver-spangled, and there was a trimness and beauty in these birds, especially in the cock, which I have seldom seen equalled, and I do not wonder at the unvaried success which has attended their exhibition.

Next, and most noticeable of all the stock belonging to Ybaz, came his Brahmas. These were the dark kind. I was introduced to some thirty cocks and cockerels living by themselves, and so easier to compare with each other than if mixed with hens. Certainly they were fine fellows; a sort of handsome heavy dragoons, and their colours well contrasting, they have not the mealy look of the light Brahmas. Their whole appearance, size, and distinct colouring mark them out to the eye, amid any number of other fowls. But if the cocks so seen in a flock, were striking, much more so were the hens. At the time I saw them they were kept apart in another yard, and certainly their most exact pencilling and gallina-like colour render them very pleasing to the eye.

I care not a rush from whence Brahmas came, what their origin; they have great merits, hence they are making their way, their one disadvantage as compared with Cochins is, that they must have a good run, but as to beauty, I place them before Cochins, followed closely, indeed, by the Partridge and Grouse. Talking of Cochins, Ybaz remarked that a hen of that breed is never seen to such advantage as when on the nest. He is right, then it is that you especially see the motherly, and sensible, and half-human expression of the face of the Cochins hen.

Well, I thought I had seen all; but, no, Ybaz was a good showman, he kept the best for the last, he opened a door, and out walked in solitary dignity his grand old Brahma cock, to which his others looked almost slim.

Having now seen all the fowls, we talked of gardens and roses. One hint I got, a valuable one to those who keep poultry, and yet love their gardens. Ybaz rears his spring chickens on a sunny border partly under glass (Cucumber-frames, I think), then when the chickens become bigger he moves all away, and plants the said border with Asters, and gets a late summer garden.

Time passed pleasantly away, when dinner came, and, oh! Ybaz—cunning man again—knowing I was an Englishman, you were bent upon converting me through my stomach, for lo! a cover is raised, and there lies revealed a roasted Malay. Well, what there was of it was most excellent; but, Mr. Brent, the breast was sharp and thin compared to your Dorkings. Pleasant chat followed a pleasant dinner, and home again. The sun had shone on me all day, and I had not been obliged to worship that luminary, so I dared to look the Bishop full in the face at the Visitation a week afterwards. Onwards towards home, the back journey, the short walk, and I again neared my rectory, where I found as usual—

"There was a comforting fire,
There was a welcome for somebody,
There was a coat o'er the chair,
There were slippers for somebody."

—WILTSHIRE RECTOR.

POULTRY-KEEPING FROM A COMMERCIAL POINT OF VIEW.

(Continued from page 77.)

ARTIFICIAL VERMIN NURSERY.

THIS is a very useful department in a poultry-breeding establishment; it will supply the poor prisoners with those dainty little morsels for which in their free state they never tire of looking after. It is well known, that from the chicken to the old hen fowls prefer insects and worms to any grain. In fact, fowls are omnivorous, but their carnivorous appetite predominates, and they would very soon become unfit for human food were they indulged in their predilection; but in a free state they have to perform hard work in their search for insects and worms, of which, after all, they find but a scanty supply. It will not, therefore, be advisable to give fowls in a confined state too much animal food, but only in such quantities as will be a stimulant and not injure their health. The effect on a hen fed too freely on animal food becomes soon perceptible; she will pull out her feathers and even peck her flesh until the whole of the upper part of her body is one mass of raw flesh.

It is not intended that the vermin should replace the minced meat in the food of poultry, but should occasionally be given in addition, as dainty morsels in wet or cold weather.

The vermin nursery is formed of a succession of pits with concrete bottoms, and the sides lined with brick; the top is covered with a trap to prevent the rain entering, as this might kill the vermin.

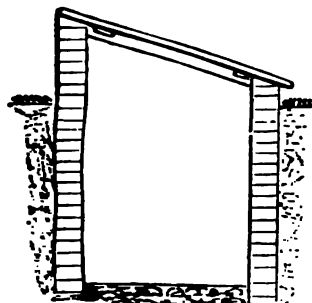


Fig. 23.—Section of Vermin Pit.

To propagate vermin, put in alternate layers of mould and vegetable and animal matter, such as horsedung, garden refuse, entrails of animals, dead animals, blood, &c., until the pit is filled. In a short time fermentation will commence, and the mixture will soon be converted into a living mass of vermin. If the fermentation take too long it may be hastened by watering. In winter it is well to cover the mixture with horse manure, which will keep the vermin warm and alive.

This process of obtaining vermin is inexpensive, and it will be found very serviceable in winter for young chickens, and for stimulating the fowls to lay.

POULTRY MANURE OR GUANO.

In the ordinary way of breeding poultry their valuable manure is lost, and we actually send ships to the Pacific and all over the world to fetch those very droppings of fowls which we despise to collect at home; yet in a large breeding establishment the collection of this manure, so much sought after by florists, will yield a considerable extra profit, which can safely be calculated at the rate of £50 per annum for every thousand fowls; but as vegetable growing, the refuse of which is good food for poultry, is almost a necessary adjunct to a large breeding establishment, the manure would be still more valuable to the proprietor.

THE FEATHERS OF FOWLS

Are another extra source of profit in large establishments where they can be sorted and dried, as they will then command a much higher price, and this item may be computed at £10 per thousand head.

THE MOULTING OF FOWLS

Is classed by many writers on poultry under the head of diseases, which it is not, but only a natural process with most animals in changing their summer coat for a winter one. Nevertheless, it is a great drain on their resources, and fowls during moulting ought to be kept warm and liberally dieted with warm and stimulating food—such as boiled oatmeal seasoned with salt and pepper, chopped onions, mashed potatoes, and occasionally bread crumbs soaked in strong ale or weak gin. Oxide of iron can also be

given at this time with great advantage. This diet will accelerate moulting and cause the fowls to resume laying at an earlier period than would otherwise be the case.

DISEASES IN POULTRY.

Most books on poultry contain a more or less lengthy description of the various diseases fowls are subject to, and prescribe certain remedies, all of which help, no doubt, to swell the book, but are perfectly useless for all practical purposes. We might as well try to doctor ourselves for diseases of which we know nothing. The diseases in fowls may chiefly be ascribed to our variable climate, to dampness and cold, to injudicious feeding, and to ill-ventilated roosting places.

A diseased fowl, as will have been observed by many, is never kindly treated by its healthy companions, and in my opinion the best and most economical cure for a diseased fowl is to kill her before she is too far gone, and whilst yet fit for the market, and if not fit for the market, she will, when hashed up, make good food for the pigs. I acknowledge myself ignorant of the diseases of fowls, consequently of their proper treatment, and as I have no desire to teach the public that which I do not understand myself by simply copying from other books, I shall only state, that with judicious feeding and housing according to my plan there ought not to be one diseased fowl in a thousand.

VARIOUS RACES OF POULTRY.

On this subject I would refer the reader for information to some special publication, as it does not exactly enter into the consideration of poultry-breeding in a commercial point of view. All that is necessary to know of the different races is to be able to distinguish those that are the best layers, the best sitters, and the best table fowls, and never mind about the particular points or feathers, the distinguishing characteristics of a pure breed. Now, where eggs are the sole object, some small breeds lay larger and more eggs than larger fowls. For this, Hamburgs, Spanish, and some cross-bred hens may be kept with advantage; and as for fowls that will do credit to the breeder for their weight after being fattened—Dorkings, Brahmas, and Cochins, and their crosses should be selected.

KILLING AND DRESSING POULTRY FOR THE MARKET.

Almost every locality has its own system, but I may advert to a few facts on this subject. Poultry when bled to death is much whiter in the flesh; they will also keep much longer fresh when the entrails are drawn immediately after death, and the fowl stuffed as they do in France with paper shavings or short cocoa-nut fibre to preserve the shape. Some breeders cram their poultry before killing to make them appear heavy. This is most injudicious, as undigested food soon enters into fermentation, and putrefaction takes place, as is evidenced by the quantity of greenish putrid-looking fowls that are seen in the markets.

MACHINERY, IMPLEMENTS, AND UTENSILS.

Without desiring to recommend any particular plan for saving labour, it is, nevertheless, desirable to state, that in any establishment of magnitude the expense for labour forms a prominent item, and it will, therefore, be to the interest of the proprietor to invest a certain capital in the purchase of such machines and utensils as will not only economise labour, but also perform the work much better than it could be done by manual labour.

The principal machines required are—a grinding mill for the grain; a pug mill for mixing the poulaceous food; a mincing machine for the meat and vegetables; a potato-mashing machine with wooden rollers; a sifting machine; a weighing machine, scales, and sundry smaller machines; also, a steam-boiling apparatus, a heating apparatus, and, in fact, such appliances as will not only economise labour, but also materials, and particularly fuel.

The manual labour itself ought to be sub-divided in such a manner that each person has his or her particular branch to attend to, in which each person will very soon become so expert that the work will be performed much better and in less than half the time.

WHITEWASH.

A large quantity of whitewash will necessarily be required for sanitary purposes, but if prepared as follows, it will possess the advantage of preventing the wood from taking

third prize was won by Mr. Williams, of Nottingham, with a good specimen. There were several other good birds in the same class, mixed up with two or three sadly out of condition, especially one in a cage with No. 55 label upon it, and another with roughish feather marked 64. The Variegated Belgian classes were but middling, the first and third prizes in Class 6 being given to Mr. Corbett, and the second prize to Mr. Martin, Belper. One bird shown by Mr. Nicholson would have taken our fancy more had it been marked about the head to match with the wings. In Class 7 Mr. Phillips, of Basford, showed two good birds, with which he won first and third prizes, and one in particular was possessed of kind feathering but was somewhat small. Mr. Corbett's second-prize bird, and Mr. Goodwin's highly commended bird were fair specimens, but we cannot speak of the variegated classes as being so good as we have before witnessed. The Crested Belgians as they were styled, or the Manchester copy as we will call them, had five entries, and only a second prize was given. The Marked Belgian class contained several first-class birds, but we preferred the one which was awarded the second prize. The gold and silver spangled Lizards were very superior, the first prize in each class being won by Mr. Phillips. Mr. Chapman, Northampton, was awarded second prize for a Jonque Lizard; Mr. Williams second-prize for a mealy Lizard, and H. Ashton, Esq., won the third prizes in each class. The Goldfinch mules were exceedingly good, the first prize in Jonques being given to a choice specimen shown by Mrs. G. Barnesby, and which has won at various exhibitions eight first and three second class prizes in England and Scotland. H. Ashton, Esq., won the second prize in each class, and the third prize in Jonques was given to a famous bird belonging to Mr. Crocker, Plymouth, who also entered in the same class a curious-looking black mule. Mr. Edward Bemrose exhibited a rare mealy mule, with which he easily gained first honours, adding another laurel to three other first prizes at other exhibitions. In Class 14 a first prize was deservedly awarded to a rare mule, bred between the Goldfinch hen and Cinnamon Canary, belonging to Mr. Pointon, Basford, although we should have liked to have seen Mr. Lingard's Linnet mule with a prize also, but the class was not well filled. We never saw a bird more out of its place than Mr. Williams's Green Belgian, for the class was set apart entirely for mules or hybrids, and why should Judges have to contend with such a mixture? The cages containing collections of six birds each were most excellent, and numbered seven in the whole, six of them receiving high commendations. Three of the seven aviaries contained Goldfinch mules, and were exhibited by H. Vauncey Crewe, Esq., of Calke Abbey, Mr. Walter, of Winchester, and Mr. G. J. Barnesby, of Derby, the latter exhibitor winning the first prize with a superb and even collection. The mules shown from Calke Abbey were the next best. The half-dozen yellow Norwich Cocks belonging to Mr. Walter were very showy birds.

The British birds generally were very fine in plumage, but we did not think the Bullfinches so good as previously, and the first-prize bird must have been judged more for its size than plumage. As to the Goldfinch class, which numbered 17, all good birds, we must admit never having seen such an assemblage of these gay-looking little fellows. The Judges were quite right in giving an extra prize in this class, and we may remark that so good were many others that they were fully deserving of prizes. The Brown Linnets were fair samples, and the winner was correctly placed, although had Mr. Key's birds been in smarter attire it would have run the winner close. The Skylarks and Blackbirds were rightly judged, although in the latter class the losing birds were fine, one of them belonging to Mr. John Litton, Derby, was worth seeing only for the curious formation of its mandible. The first-prize Thrush was especially good, and the company it was keeping added no disgrace, the class being noted as very beautiful. There was one solitary Starling, and with no competition no prize was given.

The classes for foreign birds were made up as follows:—One rose-breasted Cockatoo, but no award made. Seven Grey Parrots were present for competition, and formed a conspicuous and interesting feature, some being rather talkative. The first prize was given to Mr. T. Biddulph's bird, and the second to Mr. Corbett's, the bird which gained first prize at the last being commended. There was no entry

for Green Parrots, and a second prize was given to Mr. T. Harper, for a pair of Australian Grass Parakeets, although we believe the awards would have been otherwise, had not one bird escaped from cage 201, and could not be caught until hunger induced a discontinuance of its flighty diversions some time after the awards had been made. In the extra Foreign class, Mr. Booker, Liverpool, took a first prize with a West Australian King Lory. In the same class, Mr. T. Harper, Derby exhibited a fine Lory Parakeet, and Mr. Scrimshaw, of Nottingham, a pair of Cockatoos, pairs of Diamond Sparrows, Java Sparrows, Indigo blue birds, and African Waxbills. There were three entries for collections of Foreign birds, two of which put in an appearance, and the first prize was very justly given to that belonging to Howarth Ashton, Esq., whilst a commendatory card was attached to Mr. Walter's cage.

Many fine birds, and several pens of poultry, were sent for exhibition and sale, including a Goldfinch and Canary mule braced and fastened to a frame of very tasty design, with a small box which the bird lifts the lid of to feed from, and also affixed to the frame is a little vessel from which the bird draws up water. It belongs to Mr. Bambridge, Nottingham, and was much admired. Mr. J. W. Price showed a large pen containing several fine golden Pheasants. Mr. Walter exhibited half a dozen drawcages with Goldfinches and Redpoles as occupants, which when hungry were obliged to draw up an inclined board a small waggon, descending each time the bird fed. Mr. Edwd. Bemrose's very rare specimen of a Linnet, a pure white one, commanded much attention, as well it might. Mr. Scrimshaw, also sent three Grey Parrots, a Macaw, several Indigo blue birds, Siskins, and Bramblefinches. Mr. J. Price sent a Brown Owl and a Hawk, and some well bred fowls were shown by Mr. G. Crewe, Mr. Pountain, Mr. E. Bemrose, and others. Several choice dogs were also exhibited by Mr. Bunting (one a winner of three or four prizes), Mr. Rickard, Mr. Chapman, and Mr. Martin. Great praise is due to the Secretary, Mr. J. W. Price, and others of the Committee for so conducting the Show, and who wish to express their thanks to the librarian of the institution and also his wife (Mr. and Mrs. Davison), for their courtesy and assistance rendered.—Geo. J. BARNESBY, Derby.

PHENOMENON IN HIMALAYAN RABBITS.

I HAVE kept Himalayan Rabbits for the last twelve years, and it is quite a common occurrence for one out of a litter to be black, and before two months old it turns perfectly white. I give mine no water, and very little green meat, principally feeding them on oats and bran.

I observe an advertisement in your paper, offering Himalayan Rabbits for sale at 12s. a-pair; allow me to observe that 6s. a-pair will buy mine, perfectly thoroughbred.—HIMALAYAS.

MR. LANGSTROTH, THE AMERICAN APIARIAN.

"OUR Editors" have done me no more than justice in believing that I should hasten to correct any error that I might have fallen into with regard to the above-named distinguished gentleman.

The apiarian readers of THE JOURNAL OF HORTICULTURE can bear witness, that I was the first to introduce Mr. Langstroth's valuable book to their notice, and that I have always spoken most highly of it. By me also was it first brought to the knowledge of my friend, Mr. S. Bevan Fox, who has only echoed my own sentiments in fully appreciating its merits.

In according to Mr. Langstroth the credit of introducing the frame-hive and German method of managing bees into America, I had not the slightest intention of representing him as either borrowing or copying from our Teutonic brethren without the most ample acknowledgement. The facts of the case, which are no doubt correctly stated by him, both in his letter to "our Journal," and in his excellent work on "The Hive and Honey Bee," seem to amount to this, that substantially the same results were worked out

by careful observation and laborious experiment on both sides of the Atlantic pretty nearly at the same time without concert or copying one from another. It matters little, however, to English apianians whether the American or the Teuton were actually first in the race, which so far as we can judge from Mr. Langstroth's statement appears to have been nearly "a dead heat;" all we should do, and all I am desirous of doing, is to accord the full mead of praise to each, and to thank both most heartily for the good service they have rendered to the cause of scientific bee-keeping.

Most sincerely do I congratulate the conductors of "our Journal," on the prospect of so valuable an addition to their staff of apianian contributors as the Rev. L. L. Langstroth, and I can assure him, that by none will his contributions be more eagerly watched for, or more warmly welcomed, than by—A DEVONSHIRE BEE-KEEPER.

A NEW CHAPTER IN THE NATURAL HISTORY OF THE BEE.

BEE COMMOTIONS AND QUEEN ENCASEMENTS.

(Continued from page 81.)

THE last case I mention is that of No. 5, a frame-hive.

On the 12th of April, 1861, I examined this hive as no young bees had yet shown themselves, and as I had observed several small drones, imperfectly formed, extruded. My suspicions were aroused in consequence. I detest those little malformed drones. Their appearance always denotes something abnormal, and is suggestive of impending ruin. I drew up the frames and found in two worker-combs drone brood sealed, and several small drones with imperfect wings at large, but no worker brood sealed or hatched. A considerable number of eggs and larvæ were noticed in contiguity to the sealed drone brood. The cells sealed were all elongated, and as in ordinary drone cells they had the same convex coverings. The queen was not so feeble-looking as that of No. 13 above alluded to, whose queen was also a drone-breeder. On the 24th and 30th of April renewed agitations manifested themselves in this hive, and on examining it on this latter date, I found the queen had disappeared. I gave this hive a piece of brood-comb, but, as in the case of No. 13, it failed to rear a queen.

From these and other cases of a kindred character, I concluded that the encasement of these queens and consequent commotions were entirely caused by their extreme age and their abnormal condition as drone-breeding queens.

The only queen I ever had which ceased to lay altogether, either drone or worker eggs, was in 1862, and this was one of the two sent to Mr. Woodbury for microscopic examination in the autumn of that year, as already stated.

I have already given illustrations of the third class of queens being subject to imprisonment—namely, such young princesses as are not timeously fecundated. I have had instances of young queens, however, which remained perfectly sterile throughout the entire season so far as I could discover, and which I consequently presumed had failed to get fecundated at all.

In 1861, in consequence of the extraordinarily unfavourable character of the weather, a great number of the queens I artificially reared during that season failed apparently to get fecundated at all. Two became drone-breeders, and one queen reared in July after having been seen taking her usual aerial excursions, appeared again in August after the hive had been sent to the heath, and again during a very mild day after the hive was brought back, about the end of September. On the latter date she repeatedly came out, took a short circuit, and returned. When returning a number of bees on the board watched her proceedings, and on her attempting to alight repeatedly darted at her in the air, and struck her down to the ground. This, however, I have frequently noticed before in similar circumstances, and the only object the bees have in such freaks appears to be, to induce her to extend her flight for certain obvious reasons. In consequence of the repeated assaults on this occasion, the queen appeared really unwilling or afraid to enter. She flew about the whole apiary curiously examining other hives as if wishing to enter them. Having rested on a low hedge I caught her, and as I had other queens in my apiary at the

close of that inauspicious year in the same unsatisfactory condition, I resolved to retain her, and in this way I was enabled at little trouble to present a reserve queen to this hive which was adopted.

I may also state that I once reared in a unicombed hive, in July, 1860, a queen which was somewhat malformed—a marked and considerable indentation being conspicuous on one side of the abdomen. She in due time, however, became fertile, although never very prolific. In the autumn of the following year, 1861, one of my hives at the heath, some twelve miles distant, lost its queen, and I despatched a messenger with instructions to present this queen to it to keep it from giving way. My friend performed the message successfully, as I afterwards found in the following spring, when, on the 15th of February, I introduced the same malformed queen and her subjects into the old unicombed domicile, in which she had been reared. On the 8th of March, on looking into this hive, I noticed the queen was encased in a cluster of bees. I beat the hive, but though all the rest of the bees went into intense commotion, the bees in the cluster never let the queen out of their hold. I opened the glass, took a twig, and separated her from the bees. Under the irritation produced by my separating them, one bee curved its body as if in the attitude of stinging. The queen, however, moved nimbly off uninjured, but pursued by the bees. Some days afterwards I found the bees again in commotion, and on examining the interior I found the queen had entered a common cell, her posterior part only being visible. I opened the glass, and found her dead. I had a strong impression at the time that the physical defect or malformation of this queen might have had something to do with her untimely end, and this impression has, I think, been confirmed in some other instances in my experience where defective queens were superseded by the rearing of new ones. One of the most extraordinary cases of this kind occurred in my apiary during the last season—so extraordinary indeed in the circumstances attending it as to eclipse all others. A notice of this case, however, I must reserve for some future occasion. Suffice it here to say that for the first time in my apianian experience there was exhibited in one of my hives the wonderful phenomenon of two fertile queens living together in apparently the most perfect amity and concord.

My treatment of the curious phenomena now under discussion, would be incomplete did I not allude to some other instances of queen encasements not yet specially referred to.

Let us briefly inquire therefore:—

1st. What are the effects produced by introducing a queen into a hive already possessed of one?

2nd. What are the effects produced by the union of two or more swarms with their queens? And

3rd. What are the effects produced by the introduction of a queen into a queenless hive?

As to the first question, then. In 1859, I had in my observatory-hive a queen which had been deprived of a hind leg. Whether this defect had any influence on her prolific powers I know not (she was by no means very fertile), but it produced a peculiar eccentricity in her ovipositing, which was very detrimental to the prosperity of the colony. Very frequently in attempting to deposit an egg in a cell which she had previously fixed upon, the abdomen would be thrust altogether into a contiguous cell in which an egg had been already laid. The result of this was, that numbers of cells contained several eggs. I noted a case which was narrated by Herr Mehring, in the German "Bee Journal," and inserted in this Journal by Mr. Woodbury, in August, 1862, which bore some resemblance to the one now stated by me. In this case, however, the queen had been deprived of two of her feet; but though at first her laying was of the same character as I have described above, yet at the end of four days the oviposition became more exact, and afterwards quite normal. On the 13th of May, having a spare fertile queen, I wished to see how the bees would receive and dispose of her. I opened one of the glass frames, placed the stranger queen on a part of the comb unoccupied by the bees, and shut the frame. The queen had scarcely time to move from the spot where I had placed her, when her presence was challenged by a host of sentinels that instantly attacked and surrounded her. The queen tamely submitted, and from 5 o'clock P.M. to 8 o'clock the following morning the

bees held her captive. I removed the cluster out of the hive, when I noticed a bee affix its sting in her body, and I had some difficulty in extricating it, even after the queen was dead. In such encasements as this, the bees not only seize the queen by the wings, legs, proboscis, and antennae, but sting her most unmercifully, and even retain possession of their victim till the very juices of her body appear to be sucked away, and when she falls from their relentless hold she looks like a withered dried-up carcase which has been exposed to the action of the atmosphere for weeks.

In 1858 I tried a similar experiment in this observatory hive by introducing a stranger queen, and the results were almost identical. The cluster formed around the queen I detached from the hive, put it aside under cover, and one might roll it about like a ball, so tenacious were the bees around their hapless victim; and they thus remained almost like a lifeless mass until I forced a separation, when in this case the queen was found dead in less than half an hour.

2nd Question.—To try the effects produced by the junction of swarms. On the 1st of October, 1859, I had the bees of two driven hives in separate skeps with their queens. These I beat out simultaneously upon a cloth, and permitted the conjoined bees with their queens to enter an observatory, in order that I might witness the results. The bees were very numerous, and some time elapsed before all were domiciled. Shortly after, in looking through the glass for the queens, I discovered one encased half-way up the comb, with a circle of bees having their heads all directed to a central point, in which the queen, from the smallness of the intervening space betwixt the comb and glass, was distinctly seen. She was simply imprisoned, but no attempts were made to sting or injure her. The other queen, I discovered, had been arrested on the floorboard, and surrounded also by a cluster of bees. This queen I disengaged in order that I might put her in as favourable a position as the other. With this view I introduced her at the top of the hive, and she descended on the comb, but she was instantly seized and surrounded as before. Both queens were thus under arrest. Meantime the bees got very agitated, and one-third of the entire population rushed out, took wing, and would have entered another driven hive, which happened to be sited near by, had I not anticipated their intentions by shutting that hive up. I immediately, therefore, disengaged the queen first noticed, and showed her at the entrance, when in an instant a rush of bees followed her into the hive, and all the truants on wing speedily returned. Again the queen's progress was obstructed beyond the entrance, and most of the bees clustered outside the hive. By afternoon the bees quieted down, but neither of the queens was yet released. Next morning, on examining the interior, I found one of the queens at liberty, and the other was extruded dead before the hive. The largest queen was retained.—J. Lowz.

(To be concluded in our next.)

CONDENSED MILK.

Most American citizens have seen this article retailed from carts at their doors. In appearance it is a thick creamy-looking substance, of the consistency of molasses, which is afterwards reduced to suitable thinness by the addition of water. The advantages derived from condensing the milk are that it keeps sweet much longer, and is perfectly pure. This last is not the least desirable quality, for the consumer adds as much or as little water as he chooses. We have used this milk in our family in large quantities for a number of years, and find it a very great convenience as well as luxury. For coffee it is far superior to common milk, and for young children, suffering with complaints incident to them, this condensed milk is invaluable in respect of purity; swill-fed, or otherwise impure milk is the last thing to give a sickly, feeble child.

The *New York Observer* contains an account of the process of making condensed milk at Gail Borden's factory, which is the one alluded to by us, and for which Mr. Borden obtained patent several years ago:—

"The farmers bring their milk daily; it is poured into an immense boiler, the superfluous parts driven off, and the condensation effected in a few hours. The details of the process are exceedingly curious and worth studying. Everything is conducted with such care and precision as to be

ness, that the result is irreproachable. Even the large cans, in which the farmers bring their milk, are cleansed by steam before they go back. This prepared milk is sold daily in New York from door to door, as any other milk is, but its chief market is in the army, where it is a great blessing, as you will readily believe.

"The same process is applied to the juice of Apples, and other fruits, and meats. Coffee is condensed in the same way. Indeed any article of food may be condensed by this summary operation, be reduced in bulk, with all its nutritious qualities preserved, and packed so as to be preserved fresh any length of time. To make the little cans, holding a pound each, a tin shop is at work constantly, and the workers are women exclusively. They are chiefly American girls from eighteen to twenty years old, and as the machinery is driven by water and steam power, they have no heavy work on hand, and the business is admirably fitted for them. They make more than a dollar a-day easily, and the shop makes about 8000 cans daily. A carpenter's shop makes the packing-boxes, and so the entire work from receiving the milk to sending it off, is done in the factory, and this stands on the edge of the railroad at the depot, so that all labour of transporting is saved. My visit to this establishment was very interesting and impressive, for I do not recollect ever seeing a factory where so much order, cleanliness, and comfort were combined in a production so purely beneficial as this. It is the perfection of the art of condensing.

Mr. Borden can condense 12,000 quarts of milk daily at this factory, and 20,000 in another at Brewster's station on the Harlem Railroad below, and there are four or five others in operation; one at Winsted, Conn.; one at York, Pa.; one at Livermore Falls, Maine; and two in Massachusetts. They will doubtless become more and more numerous as their great advantages and profits become known."—(*Scientific American*.)

RANCIDITY IN BUTTER.

YOUR correspondent "COCHIN" sends you some butter and wishes you to account for its rancidity. Of course, I cannot do that, but the inquiry has brought to my recollection a remedy for the taste of turnips in butter, which may be worth the attention of some of your readers.

Some years ago on an angling excursion to the beautiful trout stream, the Washburn (a tributary of the Wharfe), I was driven by a heavy shower of rain to take shelter in a farmhouse, and found the farmer's wife making her butter ready for the market. On asking her if her butter tasted of turnips she said, "Oh, no, my butter never tastes, I know how to prevent that." I said, "That is a secret worth knowing. How do you manage?" She replied, "When the milk is brought in from the cows, I have always a kettle of boiling water on the fire, and to every gallon of milk I put half a pint of the scalding hot water. I carefully stir milk and water together, then set it away, and my butter never tastes of turnips. Try the experiment and you will find it answers."—T. G.

OUR LETTER BOX.

BREEDING DUCKWING BANTAMS (*Hy. N.*).—You may breed Duckwings from the birds you mention; it is often done to get the chestnut wing and saddle, and the black breast.

PIGEONS AT JEDBURGH SHOW.—In your report of the Jedburgh Show it is stated that my Owls were disqualified, but no reason is given. I entered a pair of Owls, and the white cock died before the Show, and not having another all white, and not wishing the pen to be vacant (as I was sending three pens short besides), I sent a white cock with a black tail. Individually they are first-class birds, but not being a match they were disqualified. It may have been absurd of me sending them, but I would rather be thought absurd than dishonest.—J. R. ROBINSON.

LOP-EARED RABBITS (*A Beginner*).—The points are—1, length of ear; measuring across the head from the tip of one ear to the tip of the other; 2, width of ear; 3, colour; 4, position of ears; 5, largeness of eye; 6, carriage of body; 7, size. You can have "The Rabbit Book" from our office free by post for seven postage stamps; in it you will find much information you will do well to possess.

PARROT STRIPPING OFF ITS FEATHERS (*W. H. W.*).—We have repeatedly warned our correspondents that a Parrot doing this is suffering from intense irritation, induced by over-stimulating food. Parrots in a wild state are strict vegetarians, and to give them meat and bones when confined is to stimulate them unnaturally, at the same time that they are deprived of exercise in the free air. Feed your Parrot upon bread and milk and fruits only. At the same time give it a tepid bath daily, as we recommended on the occasion to which you refer.

entered upon its ripening period. A week of cold weather, or a drought of a fortnight during the growing period, puts in peril not the size merely, but also the quality of the produce. Big Apples are unfortunately only too seldom first-rate for dessert, still, as a rule applied alike to big sorts and little, the largest fruit on a given tree are also the choicest in flavour and in texture. The Golden Pippin has charms in its very littleness, but the biggest of the same crop are invariably the best. In passing, it may be asked, Has it been noticed that in fruits generally, when colour is a constant quality, does not the flavour bear some relation to the intensity of the colour; the brighter and the more brilliant the red, the richer and more luscious the juice? Not that highly coloured varieties are in any way superior to those of dull russet, but in varieties having a tendency to colour, or even to russet, are not the individual fruits in which that tendency is most strongly developed, also the best?

Of the positive increase of size, however, there is one portion that would seem more properly to belong to the ripening than the growing period. I refer to that rapid increase in the size of the Cherry and Plum accompanying the change of colour. Does the actual weight of dry solid matter increase during this change? or is the increased size only an accommodation of the size of the vessels to the altered nature of their contents, which are now less amyloseous and more saccharine? The latter are soluble in water, the former not so. Is the increase in weight not wholly or principally in water absorbed during the ripening process?

Though not so patent, a similar increase seems to take place in the early part of the ripening period of Pears, and I think also of Apples.

The great agents in furthering the production of good fruit during the growing period are light, heat, and moisture. All these are essentials during the entire life of the plant; but, as during the blossoming period, a moderate proportion of each seems all that is requisite for our open-air British fruits; and as, whilst the fruit is ripening, light and heat in quantity, with only a very limited supply of moisture, seem the most favourable conditions, so during the growing period an abundant supply of all three is a necessity. Of light and heat we have never enough to satisfy us, and, somewhat strangely, the limited quantity of the one has been almost universally accepted as a circumstance we must submit to, and, quite as odd, endeavour to compensate for by a disproportionate increase of the other. Some day when we have learned to concentrate upon 9 square feet of soil or leaves the solar rays that would otherwise fall upon two, three, or five times that superficies, we shall have more light thrown upon fruit and fruit-culture.

Of moisture, the third essential during the growing period, we want abundance, and yet we may have more than enough. The natural supply, more especially in this country of naturalised fruit trees, where we want a dry soil and atmosphere to ripen our Cherries in, at the very time when precisely opposite conditions are required for Apples and Pears, is proverbially fickle. So thoroughly, indeed, are we at war with the elements that we may be longing for dry weather for one Cherry, whilst another Cherry equally good would suffer from lack of moisture. The clouds persist in dropping their fatness at most unreasonable times, and always either too much or too little. And here comes in the great question of house sewage and irrigation generally, forced on the attention of both gardener and farmer by the trying season of 1864. Prophets like "UPWARDS AND ONWARDS," who for fifteen years back have been crying aloud in the wilderness to a very heedless generation, have not preached altogether in vain, and the lover of good fruit will see that he, too, may share in the good things foretold if he but consent to turn to its proper use what, if it run to waste, entails heavy retribution upon the spendthrift in a fearful crop of half the life an hospital is heir to.

Implying by the term "house sewage" all the excreta of a household very largely diluted with water, it may be accepted at once as the cheapest, most effective, and most elegant medium by which in the fruit garden the soil may be compensated for what is abstracted from it by the fruit. The term "elegant" may be a little out of place in a matter of manure, but nearly all adjectives are relative only. As

Liebig says—and a very odd remark it is to occur in a volume on agricultural chemistry—"At all times the better has always been the enemy of the good;" so is house sewage, applied as I saw it yesterday, elegance itself alongside my neighbour's ash-pit-emptying of last week. If your garden produce more food than your family consume, and artificial manure be necessary, add it in a soluble state to your sewage; it is then in the best of all conditions to assist successful fruit-culture. However vegetables may thrive on such fare, Strawberries and Gooseberries, here at least, rejoice in copious libations of even extra strength. "UPWARDS AND ONWARDS" says better still for Apples and Pears, and all analogy coincides with his successful practice.

Of all the rainfall in this country in the course of the year somewhat less than one-half finds its way through the crust of the soil, re-appearing, perhaps, in springs and rivulets; the remainder and greater part is returned to the atmosphere by evaporation from the surface of the soil, or from the leaves and other parts of plants. This, however, is but an imperfect statement of the case, for from well-ascertained data it has been calculated that in the summer months in the eastern counties of England the evaporation of moisture reaches as high as 97 per cent. of the entire rainfall in the same period. No doubt for a considerable period much of this is retained by the soil, contributing to the furtherance of vegetable growth, and finally escaping to the air through the stomates of the leaves after having fully accomplished its mission; but the fact that such a small proportion as scarcely 3 per cent. should find its way through the soil by filtration, shows what a fearful check even a very moderate drought must entail upon such fruits as are at the time in their growing period. If, as should be, the rootlets are near the surface, the effect is proportionately increased.

Very unfortunately for the fruit-grower, meteorologists are not all gardeners. Their recorded observations are not tabulated, as they might and should be, first of all in relation to vegetation, the chief end that makes the weather worth studying. We are still treated to the antiquated tables of mean temperature of days and months, as if that were the essential element in the measurement of the atmosphere's caloric, to the virtual suppression, or nearly so, of the average and extreme maxima and minima, which are the only very important points. Very hot days and very cold nights may be the best of all weather, and yet the tables indicate a July with a mean temperature below the average. So, too, as to rainfall. We may have three very wet days in the beginning of the month, and as many near its close, evidencing quite a maximum of wet, and yet the weather of the month may be characterised by intense dryness. Mr. Glaisher, in his abstracts, is happily reforming the method of expressing weather facts, and gives us, both as to heat and rainfall, the length in number of days, of cycles of heat or cold, rainfall or dryness. This is reasonable. We may have a few very cold days, which pull down heavily the average maximum of an otherwise very brilliant month; or an average month, less favourable to plant-progress than a month with alternate cycles of heat and cold, resulting in the same average maximum as the other. Ere long, I hope, in every garden we shall have a cheap sunshine-indicator, measuring the most potent influence of all, the duration each day, and at what times of the day, of the direct solar rays—wonder-working, above all things else, in both animal and vegetable worlds. Now that we know so much, we can afford to look half lovingly, as well as half pitifully, upon the ancient fire-worshippers of the old time before us.

With so fickle a friend as rainfall to help us to grow delicious fruits, sometimes deluging us beyond our heart's content, at others withholding the longed-for showers, we may consider ourselves as twice blest in having it within our power to make at least a portion of it do double duty. We have happily not often, as in 1860, a preponderance of really wet weather all summer through. We have oftener to regret the lengthened intervals between the wet cycles; and at these times, by previously carefully storing up the water which usually runs to waste, we have, in irrigation, and, in a double sense, in house sewage plentifully diluted, the means of supplying the deficiency in the natural element.

I may have failed fully to comprehend the system of irri-

gation followed by "UPWARDS AND ONWARDS;" but it seems difficult to understand how only two abundant waterings could so materially affect the quality of the fruit. Very wisely, he seems to have apprehended the bearings of the old proverb—"It never rains but it pours," and gives a real, hearty, wholesome watering when he is at it. One hundred tons per acre is roughly calculated at an inch of rainfall, and each of his waterings slightly exceeds an inch and a half, together exceeding a full month's natural fall. Twice, however, seems too seldom in the average of summers for fruit which does not begin to ripen till September or October. The secret of his success must lie in the careful selection of the most profitable times at which to apply the sewage—once, he says, just as the fruit is fairly set, and again when half grown.

How this sewage watering should affect for the better the flavour of the fruit is worth a little inquiry. I have six Sturmer Pippin Apple trees, dwarfs on the Paradise stock, which for some years back I have taken special delight in subjecting to all manner of torture in the way of experiment. The Sturmer does little good with us here (Cheshire), as a standard, and even on a wall, though keeping well, it is never first-rate. In a favourable season it becomes mellow in April or May, but this is the exception; and I have noticed that in ordinary years the cells of which the fruit is formed are smaller and more compact than in the best of seasons, the fruit being also less in size. The same remark applies to the fruit of such dwarfs, in a dry summer, as I have transplanted the previous autumn. In the latter case the leaves seem to have ripened prematurely, and ceased to nourish the fruit. In specimens of the Sturmer, which I have at present from standard, wall, and from under glass, there is a regular gradation in size, in compactness of cell, and in flavour; perhaps, also, in specific gravity. Now, may not the application of house sewage, as favouring increase of mass, tend to increase of the size of the cells, and therefore increase of their contents, perfecting the fruit for entering in due time upon the ripening period, when starch, and fibre, and acid, as by the wand of a magician, are transformed into that delightful combination of "rich, sugary, and delicious," which the pages of Hogg's "Pomology" taught me, years ago, to look for in so many of our best varieties, grown where they can be, and as they should be.

The subject is an interesting one; and if I have been tempted to be too critical, or over-confident in my views, I shall be glad if "UPWARDS AND ONWARDS," or any one else, will help myself and others to a better understanding of a fact so many must have welcomed, as opening up a way to the increase of the varieties of fruit which the average of soils and situations can produce of really first-rate quality. The subject widens as it is looked upon, and a long array of questions rise up, insisting each upon its answer. How may sewage be best applied so as to avoid the loss of temperature consequent on all surface irrigation? Should the liquid be heated before application, and to what degree? and is there any economical means by which its temperature may be elevated, with, in its results, a real profit, calculated in pounds, shillings, and pence? At what times, and how often, should irrigation be employed, and in what quantity? Will not each fruit, and each variety, claim a distinct treatment for itself? But, truce to questions; like every other new idea (and yet, whilst new, a very old one), if there be anything of value in it, discussion, by interested minds, will elicit all that is worth having; and, meanwhile, we may thank "UPWARDS AND ONWARDS" for suggesting new answers to the now-popular query—"What shall we do with our sewage?"—FRUIT-EATER.

THE MODERN PEACH-PRUNER.

No. 3.

PHENOMENA CONNECTED WITH GROWTH.

THE substances necessary for the life of plants are absorbed by them from the soil, by means of the roots, and from the atmosphere by means of the leaves. De Jussieu calls these last "aërial roots." Their functions, in some degree, resemble those of the human lungs. They absorb from the air the water and carbonic acid which they require. Roots draw from the soil mineral and saline materials,

besides the carbon and nitrogen which artificial manures supply.

The spongioles alone are the absorbing organs of the roots, nutritive substances are introduced by them in the form of liquids, which proves how indispensable water is to vegetation. Fluid nourishment is, therefore, the basis of the growth of plants. It is elaborated in the leaves, under the influence of the solar rays during the day. Under the name of sap it ascends to the leaf-stalks, passes into the venous ramifications, and from thence into the cellular tissue of the leaf. A portion is returned to the atmosphere, the rest remains to feed the plant.

The carbonic acid of the air is also absorbed by the leaves, unites with the matter drawn by the spongioles from the soil, and is decomposed in the tissue of the leaves, in order to become nutritious matter.

The sap elaborated in this manner takes the name of cambium, and changed in the nature which it had during its ascent, it becomes proper and suitable for the increase of the plant. The sap ascends to the leaves through the outer layers of the alburnum, or young wood, during the day. It descends during the night to the spongioles by the innermost layers (that is, by the newest formed) of the liber, composing thus a new layer of ligneous fibre, and a new layer of liber. This is the manner of growth in trees. There is, however, this difference, that while the ascent of the sap increases the length, the descent of the matured sap, or cambium, increases the breadth of plants.

In spring, the sap-vessels are already gorged before the leaves show. Thence arises a pressure on the axils of the buds, which precipitates the young shoot into extension. The cambium descending, on the other hand, solidifies the young shoot by means of the new layers which it interposes. The cambium gives breadth as well as solidity. We can thus readily comprehend how a shoot which has pushed forth in some portion of a tree, deprived of the sun's rays, is unnaturally long, and soft in its component parts. The leaves of that shoot not having been exposed to the action of light, the cambium has not been elaborated in the texture. The sap remains much as it was during its ascent; the inner portion of the growing shoot is spongy and soft, the cambium being the means of hardening it, and the shoot has received little or none. On the other hand, a shoot which springs from that side of the branch which is fully exposed to light is short, and the wood is hard, well coloured, and fruitful.

The descent of the cambium is by the innermost layers of the liber, and it forms the ligneous layers which cover the medullary canal, and also the new vessels of the liber.

These ligneous and cortical layers, when formed from the cambium, elaborated in the upper leaves, are placed above those formed by the lower leaves. The ligneous layers are, however, composed from the centre outwards—i.e., the newest layer is that farthest from the centre. But the cortical layers are formed from the circumference to the centre—i.e., the newest layer is the innermost. Each year, then, a new layer of alburnum covers that formed during the preceding year. When the cellular tissues are filled in they become hard, and of a deeper colour. This is the "heart" of the tree; but the sap does not pass through these obstructed vessels any more. This portion, however, is the real support of the tree against violent winds. In like manner each year sees new liber grow, while the oldest layers, now external, possess no longer vitality, and become dry and wrinkled.

The growth of roots is owing to the descent of the cambium, by the addition of new cellular tissue to the spongioles. It is evident, then, how mutilation of these is injurious to the welfare of the tree, and how a healthy equilibrium between root and shoot is a first requisite to its healthy vitality. When these spongioles become obstructed they cannot absorb the materials of the soil, and thus the tree languishes and dies. A portion of the cambium in the autumn does not descend to the roots, but is reserved by nature to feed the young shoots before the leaves expand in spring. In shoots, the inner epidermis is formed by the aid of this reserved cambium. The first action of the spongioles in spring, may also be due to its influence in some measure.

In like manner we may readily understand the growth of the fruit. Fruit is composed of cellular tissue; like the

leaves, the epidermis is full of stomata or mouths. The parenchym of fruits has its functions as well as that of the leaves. The sap ascending from the roots is developed therein, the useless portions are evaporated into the atmosphere, the nutritious substances remain in the cells, where they are decomposed by the oxygen to form nutriment for the growing fruit. These fruits absorb a very large proportion of sap for their own use, and do not restore it to the general use of the tree as the leaves do. This is how the too abundant production of fruit exhausts the vitality of the tree, and how the crop of one year affects that of the next.

During the period of growth fruits inhale carbonic acid, and exhale oxygen. But when quite ripe they absorb oxygen, and set free carbonic acid. When, then, all this acid is disposed of, and replaced by oxygen, the fruit is perfectly ripe, and decay is not far off. In all these processes we see what an important part water plays, whether in the soil as the means of conveying the nutriment to the plant, or in the air in the condition of vapour. In the soil it dissolves the substances it meets there; in the body of the tree, as sap, it is the vehicle of these nutritive substances, and in the air, in the state of vapour, it remedies any undue dryness of the soil. A superabundance of humidity is, however, an evil. Trees grow, but produce but little fruit when moisture is too abundant.

Not less important than water is air. Without it the sap would not be converted into cambium. The roots decay when withdrawn from the influence of the air. Soil must, therefore, be permeable.

Without light trees could not feed, nor produce fruit. Light accelerates the maturing of the sap, by causing an evaporation of the superabundant water in the cellular tissue of the leaves. The roots are thus stimulated to absorb more liquid nourishment. The more light, the more root-action. A bright light is needed for the leaves to decompose the carbonic acid accumulated in their tissue. Light flavours and colours the fruit.

Heat is also an indispensable agent in vegetation. It stimulates the energy of plants, especially when combined with moisture. Even during periods of great heat the sap, then much stimulated, brings into the leaves some of the coolness of the soil derived through the roots, thus preserving the leaves from being injured by the solar rays. During the winter, on the contrary, the sap circulates very slowly, but still brings with it something of the latent earth heat, which is higher than that of the atmosphere, and thus counterbalances its coldness.—T. COLLINGS BRÉHAUT, *Richmond House, Guernsey*.

THE CLIMBING ROSE DEVONIENSIS.

HAVING read in your paper "D., Deal's," remarks on new Roses, I find he mentions having received from Mr. Curtis, of Torquay, two plants of a Rose said to be a fixed sport of *Devoniensis*, and named by him a climbing *Devoniensis*. It may be interesting to your readers to know that a Rose similar in every respect to the one named by "D., Deal," has been most successfully cultivated and sent out by Mr. S. Pavitt, nurseryman, Rose Cottage, Bath, for the last seven years, and it is the true *Devoniensis*. There are several large trees of this Rose in close proximity to the town, and growing with great luxuriance; one in particular has reached the height of 40 feet and is 19 feet wide. It is very hardy, having withstood the severe winter of 1860, blooms in great perfection all the season, and is almost an evergreen.

I visited Mr. Pavitt's nursery this season, and saw fifteen hundred plants of this Rose, budded on the Briar, flourishing to a degree almost beyond belief; nearly all had shoots 3 feet and some of them measured 9 feet in length, with three, four, and five shoots to each plant, and all of the previous year's budding. Many of the trees were in full bloom, and most magnificent the blooms were.—T. F. ANDREWS, 3, *Locksbrook Place, Bath*.

EARLY KING POTATO.—In reply to the inquiry of "E. W." I beg to state that a season or two since I received from a friend residing at Bude, North Cornwall, a few sets of a new

Potato, I believe raised and only known in that district, under the name of "The Early Emperor." They are in shape flattish-round, colour rosy red, very shallow-eyed, and altogether a remarkably handsome Potato. They were highly recommended to me for their cooking qualities. Of the latter I cannot speak from experience, as up to the present my aim has been to secure a sufficient stock. Should this prove the kind wanted by your correspondent, I shall, on receiving his address, be only too happy to send him a few sets.—JAMES NICHOLLS, *Higher Market Street, Tavistock*.

PROPOSED EXHIBITIONS OF THE ROYAL HORTICULTURAL SOCIETY.

WE have been requested to publish the following memorial which has been presented to the Royal Horticultural Society.

TO THE COUNCIL OF THE ROYAL HORTICULTURAL SOCIETY.

The undersigned members of the Exhibitors' Society and other exhibitors beg to call the attention of your honourable body to the very objectionable arrangements just announced for the exhibitions and meetings of your Society during 1865.

It is with great regret that we feel bound to comment on them in this manner. They have, however, been condemned by the entire horticultural and floricultural press, and we consider them to be diametrically opposed to our interests as exhibitors, as well as to that of the Royal Horticultural Society, and totally adverse to the practical purposes of horticulture.

It is not our object or wish to dictate to the Council. On the contrary, it is our earnest desire to co-operate with them if they will meet us in a practicable form; but with the arrangements as they at present exist we must most respectfully decline to exhibit at any of the Royal Horticultural Society's exhibitions for the year 1865; and we feel it our duty as horticulturists to communicate this intention to the Council without delay.

At a meeting of the Exhibitors' Society held a short time since, the following letter from a distant member, a well-known and successful grower of Orchids and other plants, was read, and heartily approved as embodying the views of the members generally:—

"Your letter respecting the meeting of the Exhibitors' Society is to hand. I am sorry it is not convenient for me to attend, owing to the great distance I am from you, and the loss of time it would entail.

"As the meeting is to take into consideration the programme of the Royal Horticultural Society, I may venture to express my opinion of it in a few words.

"In the first place, I decidedly object to the shows at South Kensington taking place on Saturdays. If necessary I might even enforce a stronger argument on behalf of myself and other country exhibitors living at a great distance from London than the one so ably written and published in the *Gardeners' Chronicle* for December 3rd, p. 1157, and signed "G. B.," inasmuch as those exhibitors who are situated as I am are obliged to make the journey home on Sunday, and unload our plants, which keeps us hard at work all day, besides having our several establishments unsightly on the very day they are required to be in the greatest order.

"The letter to which I have referred deserves to be read to the meeting as an answer to Sir Joseph Paxton's letter respecting his visit to an establishment near London when the plants were gone to win the stakes. It is what it deserves.

"In the second place, I consider the special weekly and floral decoration shows a complete farce. The fortnightly meetings might eventually be of some interest if small prizes were offered for small collections of different subjects in their respective seasons, in addition to awards which are at present offered for new and rare horticultural productions, so as to make them partake more of the character of a minor flower show—something after the character of the meetings which were formerly held in Regent Street.

"In the third place, I consider the whole general programme a great mistake, more detrimental to horticulture than otherwise; and I think this meeting should take into consideration the propriety of offering advice to the Horti-

cultural Society in time—that is to say, we should not, as a society of exhibitors, deeply interested, see it fall to the ground without some exertion on our part.

"As the expenses attendant on all these endless exhibitions, *lâtes*, &c. (and of no practical use), would ruin any society however wealthy, the fact that our young Society has been the means of working much good already should encourage us all to persevere in the good work.

"It is useless for me to say more, other than to give you some idea of the views I entertain regarding the Horticultural Society's proceedings. Should you think it worth while you are quite at liberty to read this to the meeting."

It will be seen that holding the exhibitions on a Saturday is one great grievance; but there are many other unsatisfactory matters of detail that cannot be stated in a letter, but which can if desired be pointed out by a deputation to confer with the Council, or otherwise, as they may decide.

It is right to add that it was unanimously resolved at the meeting above alluded to that—

"In consequence of the programme of the Royal Horticultural Society for the year 1885 being so diametrically opposed to the interests of exhibitors, the members pledge themselves not to exhibit at any of the Society's exhibitions unless the arrangements are modified to a practicable extent."

HOLLAND, J., gardener to R. W. Peske, Esq., Isleworth.
JAMES, J., gr. to W. P. Watson, Esq., Isleworth.
FAIRBAIRN, J., Son House, Isleworth.
SUTTON, W., gr. to Lieut.-Col. Jackson, Winchester Hill, Highgate.
HALL, C., gr. to Mrs. Burdett Costa, Highgate.
WEIR, J., The Elms, Hampstead.
BAKER, G., gr. to A. Bennett, Esq., Stamford Hill.
YOUNG, W., gr. to E. Barclay, Esq., Highgate.
TAYLOR, W., Lauderdale House, Highgate.
CHILMAN, H., gr. to Mrs. Smith, Ashstead House, Epsom.
MASTER, J., gr. to — Backin, Esq., West Hill, Highgate.
FEED, B., gr. to Mrs. Trudwell, Lower Norwood.
PENNY, C., gr. to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park.
CARSON, S., gr. to W. R. G. Farmer, Esq., Non-such, Chess.
KAILE, WM., gr. to Earl Lovelace, East Horsey Towers.
WHITBREAD, T., gr. to H. Colyer, Esq., Dartford, Kent.
PAGE, J., gr. to Wm. Leif, Esq., Park Hill, Stratham.
WILLSON, W., gr. to W. Marshall, Esq., Enfield.
MEADS, W., gr. to Raikes Currie, Esq., Buckwater, Hants.
POTTER, J., gr. to B. D. Colvin, Esq., Woodridge.
ALLAN, W., gr. to Earl Stradbroke, Wangford, Suffolk.
SHIMPTON, J., gr. to A. J. Dorset, Esq., Putney.
YOUNG, J., gr. to W. Stone, Esq., Leigh Park, Hants.
BULLEN, R., gr. to A. Turner, Esq., Leicester.
MAY, W., gr. to J. Spode, Esq., Hawkesyard Park, Rugby.
HOYLE, G. W., Oxford Road, Reading.
PERRY, C. J., Castle Bromwich, Birmingham.
HOLE, S. REYNOLDS, Canston Manor, Newark.
RAD-LYFFE, W. F., Rush on Rectory, Biamford.
BAILEY, THOMAS, Sharncliffe, Atherham.
LYNN, W., H-dor Gardens, Maidhead.
STEVENS, Z., Irentham, Staffordshire.
HOWARD, —, gr. to Jas. Brand, Esq., Bedford Hill, Bham.
COOPER, Dr., The Limes, Slough.
H. LANE & SON, Great Brighthampton, Herts.
B. & WILLIAMS, Hologway.
ARTHUR, HENDERSON & CO., Pine Apple Place.
J. DUBON & SON, Isleworth.
S. WOOLEY, Chesham.
W. CUTBUSH, Barnet.
W. CUTBUSH & SON, Highgate.
C. TURNER, Slough.
O. RHODES, Sydenham Park.
CASSELL, —, Woolwich.
J. & J. HAYES, Edgmontou.

We are informed that there are four or five other influential nurserymen, who, though they decline to sign the memorial, will act in accordance with the memorialists.

To this memorial the Council returned the following answer:—

Royal Horticultural Society, South Kensington, W.
25th January, 1885.

SIR,—I am directed by the Council of the Royal Horticultural Society to acknowledge the receipt of a memorial, which, on behalf of certain exhibitors at the Society's former shows, you have done me the honour to transmit for the consideration of the Council.

The Council desire me to express their regret that the arrangements they have made in respect to the exhibitions of the ensuing season should have proved distasteful to any exhibitor, but as the programme has already been made public they feel themselves pledged to adhere to it. At the same time they would observe that they will not consider themselves precluded from introducing any modification or alteration in them that experience may hereafter prove to be desirable.

It would appear from the memorial that exception is taken—1st, To the special shows; and 2nd, To the day (Saturday) on which the great and special shows are to be held.

As regards the first, the Council have only to remark that their object in establishing what they have termed special shows was to give a fresh impetus to horticulture by calling special attention to particular tribes of plants; and as regards the second objection, they have only to remind the remonstrants that in making choice of Saturday they are but reverting to the practice of Chiswick in its palmiest days, when the facilities for locomotion were infinitely less than at present.

The Council desire me, therefore, to express their hope that those who have signed the remonstrance will reconsider their decision as to the course they intend to pursue.—I am, Sir, your most obedient servant,

ANDREW MURRAY, Assistant Secretary.

Mr. O. Rhodes, Secretary, Exhibitors' Society.

ROSE GOSSIP.

FROM all quarters one hears the cry, "Never was there such a demand for Roses as this season." The difficulty has been, I have been told by more than one grower, to execute the orders; while such kinds as have received favourable notice from time to time are so run upon that it has been impossible to obtain them. Charles Lefebvre, for example, has not only been largely increased here, but I know more than one nurseryman who has imported hundreds of them from France, and yet they have been "sold out." This is very encouraging—encouraging to Rose-fanciers, for it promises them a treat, for unquestionably all this implies an increased number of exhibitors and perhaps of exhibitions; and encouraging to those who venture to act as guides in such matters, for it shows that their opinions are well read, considered, and acted upon, while it imposes on them great carefulness in their recommendations when they know that it is not merely that they are expressing their opinion, but that in so doing they are unconsciously acting for weal or woe on hundreds of others. I have ascertained that the demand for standards has not equalled in proportion what it used to be. It is just possible that the severe lesson taught in 1881 has led people to see the greater advantage of dwarf plants, or that the Rose is now more grown for ornamental purposes than formerly, and that standards are not considered so highly. Doubtless there is a vast number still sold, but those bulleted on the Manetti and grown as dwarfs are more in favour. This being the case, I would desire to say a few words once more in favour of the plan adopted first either by Mr. Charles Turner, of Slough, or Mr. C. J. Perry, of Castle Bromwich—viz., that of pegging down the shoots instead of cutting them short back. I am sure that if it were tried with, say, a few only for the present year, the number so treated would be increased every year. To those who, like myself, dwell in a windy corner of the world this plan has immense recommendations: for so much am I exposed, that in one of our recent gales a dwarf plant of *Cécile de Chabrillant* budded close down was blown clean out of the stock! This plan, known to many of your readers, consists in pegging down the shoots instead of cutting them back, the tip of the shoot being shortened a few inches. The result is that from each eye on the upper part of the branch a shoot springs, and when these are in bloom the effect is charming; and then from the centre, thus well exposed to all the influence of air and sun, shoots 4, 5, and 6 feet long start up in the summer. These are to be in a similar manner laid down, and the old ones cut away at the pruning-time some time in March. I am sure that if growers were to try it they would see the advantage of it. Of course, it is only when the buds are put in very low down that this can be done; and then the bud should be completely covered, by which means a double supply of strength is gained, roots coming out from the Rose as well as from the stock.

I find that I made a slight blunder in my notice of climbing *Devoniensis* in saying that the sport had been fixed by Mr. Curtis, such not being the case, as he tells me he is quite ignorant of the manner in which it was obtained; but the fact is none the less sure that to him is due the credit of

giving us a great acquisition to our gardens, for he informs me that he has had shoots on it 12 feet long—enough to make any one's mouth water; and as we have a climbing Fairy Rose in Cinderella, there is no knowing what sports we may have.

I have heard some rumours of reviving a National Rose Show, the proposed plan of having all shows at the Royal Horticultural Society on Saturdays completely precluding many of the most ardent admirers of the Rose from being present, and it being thought by many desirable to have an independent show, such as it was when first originated by Mr. Hole. Whether this will be effected it is impossible to say; but certainly there is no flower but the Rose which can support of itself an exhibition as it has done for years.

Have any of your readers, I wonder, experienced this result with regard to that excellent yellow Rose Celine Forestier, that when grown on a wall it will not flower, or at any rate flowers very sparingly? I had a fine plant of it that made shoots 8 or 9 feet long, but I had nothing but a few indifferent blooms; while on plants as standards and dwarfs there was an abundant bloom. Triomphe de Rennes, on the other hand, blooms profusely in the same situation. A knowledge of these points would greatly help Rose growers, and prevent much disappointment. Good folk often imagine that their little experience is not worth recording; but I am quite sure that if observations were more freely given, a great deal of valuable information might be gained.—D. Deal.

ROYAL HORTICULTURAL SOCIETY.—FEB. 4.

THE speciality for this occasion was Crocuses, but of these there were no exhibitors. Messrs. E. G. Henderson contributed a collection of fine-foliaged plants, comprising *Dieffenbachia grandis* and *Baraquiniana*; *Ficus Lyalli*, with polished pale green foliage; *Ficus Grelli*, with shining dark green leaves, not unlike those of *Theophrasta imperialis*; *Cupania filicifolia*, with very graceful and elegant Fern-like leaves; *Dracenas*, &c. From the same exhibitors came also *Cyanophyllum magnificum* and *Sphaerogyne latifolia*, the specimen of the latter with fine large broad leaves. For the above exhibitions Messrs. E. G. Henderson had first-class certificates. Mr. Bull, Chelsea, had similar awards for a collection of *Dracenas*, and another of *Agave*, *Yucca*, *Roezlia*, *Beaucarnea*, and *Bonapartea*; and a second-class certificate for *Skimmia fragrans*, a fine new hardy shrub, which produces an abundance of fragrant white flowers.

Mr. W. F. Catleugh, Hans Street, Chelsea, exhibited a number of Chinese Primulas, well fringed and high in colour. This strain, it was stated, was obtained by selecting the highest coloured and most perfectly fimbriated, and fertilising the one with the other. For these Mr. Catleugh had a first-class certificate; and a similar award was made to Mr. Ingram, gardener to Her Majesty, for a finely-flowered *Rhododendron*; and to Mr. Miller, gardener to Lord Foley, Worksop, for a basket of very good Mushrooms.

We take this opportunity to remark that the conservatory is now well worth a visit, the baskets along the front having been painted afresh; and Mr. Eyles has had them filled with *Hyacinthis*, Early Tulips, *Solanum capsicastrum*, *Skimmia*, *Azalea amona*, &c., variously arranged. The effect of the whole is excellent. In one basket, at the western end, *Berberis nepalensis* is producing numerous spikes, each about 8 inches in length, of its fine yellow flowers. It is evidently deserving of more extensive cultivation than is at present accorded it.

RABBITS AND BERBERIS AQUIFOLIUM.

IN answer to Mr. Fish's inquiries respecting *Berberis aquifolium* being eaten by rabbits and hares, I planted in '862 about 3000 plants of it with Privet, Yews, Hollies, *Rhododendrons*, and other things, and I am sorry to say it is quite as much eaten by these animals as anything else. In fact, I think more so than the Privet, and it is not the young shoots they eat so much as the old wood. Even strong shoots 2 to 3 feet high they bite in two a few inches from the ground, and there is nothing I know of that escapes their nibbling propensities except *Rhododendrons*; and nothing makes a better cover where the soil suits them.

The best remedy I have yet met with is to dress the trees with coal tar very much weakened by mixing urine, night soil, and soot with it. Of course, the tar must not be used too strong, or the remedy will prove as bad as the disease.

I trust Mr. Fish's inquiries may induce others to give an account of their experience.—W. BROWN, Elmdon.

STRAWBERRY FORCING.

MUCH of the success attending the forcing of Strawberries depends on the preparation of the plants. The main points are to have strong plants with their buds well developed, and the pots filled with roots. Various modes of preparing the plants are adopted, but there are three which I know to be attended with very good results.

One mode is, to take the moderately strong runners in August, and prick them out in nursery-beds about 3 inches apart every way. If light the soil is made firm by treading it firmly. Water is given freely, and slight shade until the plants become established. The situation should be open. In this position they remain until the following March, when they are taken up with a little ball and potted in 3½ and 4½-inch pots—the former for the early forcing small kinds, as Black Prince and May Queen; the latter for main crops of the old Wellington, Keens' Seedling, Oscar, and Sir Charles Napier; also, for British Queen for late crops. The soil should consist of strong turfy loam from rotted turves a year old, chopped pretty fine with a spade, but not sifted; and for the culture of the Strawberry in pots I prefer this compost without any mixture of manure whatever. The pots should be washed clean both inside and outside, and but one crock placed over the hole. On this a little rough sod will also act as drainage, and the roots will ramify through it. If a little soot be sprinkled over it worms will not like to come through the hole, besides the Strawberry roots are particularly fond of the soot, which is the best of manures for Strawberries. Pot the plants firmly, and let the crown be elevated in the centre of the pot. Give a good watering and on no account allow them to become dry afterwards, watering overhead twice weekly with soot water. Soot water is a certain cure for the attacks of red spider. After potting half plunge the plants or pots in coal ashes in an open situation, and if the floor is formed of ashes and boiling coal tar it will be impervious to worms. The flowers should be pinched out as they show.

In June the plants will be strong, and should be potted forthwith into their blooming-pots, which should be six-inch for the early, and seven-inch for the main crops. At this potting the drainage is made more certain by placing more crocks at the bottom than in the former case, but three pieces of pot are ample; a little rough fresh sod is quite as good a drainer as a larger amount of crock drainage. Pot with the ball entire, and ram the soil around the ball quite firm. Be careful not to sink the crown but keep it well up, its base level with the surface, and allow a quarter of an inch below the rim of the pot for watering. The plants should be plunged as before, and be kept well watered, giving water overhead on the evenings of hot days. Move the plants frequently to prevent their rooting into the soil, cutting off the roots outside, which will cause fresh ones to be emitted inside the pot. The plants should not be huddled together, but have room for their foliage so as to enjoy light and air. Under no circumstances ought they to be suffered to flag for want of water. All runners should be pinched off close.

By the second week in September the plants should be stood on boards or slates about 1 foot from the base of a south wall, and no water given except enough to keep the soil just moist, and to prevent the leaves flagging. Towards the middle of October the plants may be placed in a cold frame, especially those intended for first work, the later sorts being plunged in ashes or tan in a sunny place, to be transferred to frames as room can be found for them. Whilst in the frame they are to have air daily, and protection from rains and severe frost by a covering of mats. These plants will please most people, and for a cold locality where runners cannot be had early it is almost the only mode of raising plants to have fruit early and with certainty.

Another method is to lay a runner in a small pot as early as runners can be obtained, placing a small stone on

it to prevent its being blown off with the wind, and if another runner show beyond the first cut it away. Water daily if the weather proves dry. In ten days or a fortnight the roots will show themselves at the drainage-hole; the plant is then severed from its parent, placed in a cold frame, and kept moist and shaded for a few days until it recovers the check consequent on its separation. In a week or ten days at the farthest the plants are potted in their blooming-pots, and treated in the same manner as stated for those from runners of the previous year, except that they are more freely watered after removal to a warm sunny situation, not diminishing the supply much until the end of September or beginning of October. These plants make good forcemen, but will not produce so fine a crop, nor be so early or certain in their bearing as those from late runners of the previous year, at least they never were so with me; and it is in a great measure due to the hard pushing of young plants that the Black Prince is an indifferent setter early in the season.

A third method is to prepare six-inch pots for the small growers or early kinds, and seven-inch pots for the late sorts by placing two or three large crocks over the hole, and then a little rough compost. Placing a handful of soil in the pot, beat it firm with a rammer, and continue to add more soil and ram until the soil is level with the rim in the centre, but a quarter or half inch below it at the sides. The soil should not be very wet, but only just moist. The pots are then taken to the beds in the open garden—to those only which are in an open situation—and placed near the plants so that the runners can be laid exactly in the centre of the pots, making no hole or hollow, but simply placing the runner on the soil in the centre of each pot, and laying a small stone on it on the side next the old plant. If there is another runner above the one layered, cut it off close to that in the pot, and if any more are pushed pinch them off as they show themselves. The runners should be watered daily in dry weather, and though they will be rooted to the bottom of the pot in three weeks or so, they will obtain more strength if left attached to the parent until the middle of September than if severed when first well rooted. The pots should be raised frequently, and any roots that run through into the soil rubbed off when young and brittle. If the roots are allowed to take fast hold of the soil the plants receive a check they never recover, besides the roots are wanted inside the pot, which cannot be too full of them. When severed from the parent, the plant or plants should be removed to a sunny situation, placing the pots on rough ashes, or plunging them in ashes, tan, or sawdust, which is better. These form excellent plants for forcing after January; but they are not so good in my estimation as those treated according to the two preceding modes.

A fourth method, and it is the last that I shall name, is to take the earliest runners in the last week in July, if they are to be had, but not later than the first week in August. Select good strong runners and pot them in 60-pots, placing them in a close frame and shading slightly until established. The pots being crammed with roots, in three or four weeks the plants may be potted, the earlier kinds into 4½-inch pots, and those for the main-crop sorts into six-inch pots. After potting they may be placed in an open situation, sunny and sheltered, but not shaded on any account, and if plunged they are all the better. Here they may remain until the last week in November, when they should be transferred to a frame, orchard-house, or any cool house, and be kept dry rather than wet during the winter. These make nice plants for forcing after February, but they are of no value for hard forcing. It is a good system for orchard-houses and cool vineries, but the preceding is a still better one.—G. ARNETT.

(To be continued.)

UTILITY OF LOOSENING THE SOIL.

I HAVE seen at different times statements in your paper from Mr. Fish, and others, that the looser the surface, the greater will be the moisture of the soil.

Without questioning the experience of practical men, I venture to ask the reason of this. The looser and rougher the soil, the larger must be the surface of earth exposed to the air, and, consequently, the greater one would imagine the

evaporation to be. A block of ice, we know, is kept from melting by wrapping it in a wet blanket, the rough surface of the blanket throwing off, by evaporation, more moisture, and with it heat, than any covering of a smoother texture would do. How is it, then, that a like irregularity of surface does not produce a like rapid evaporation of moisture from a crumbling and friable soil? Is it that the loose soil is even more quick in imbibing moisture from night dew, than it is in exhaling it during sunshine? This is certainly the case with tan, which for the reason above stated, must evaporate largely, but which must absorb more; for, even if but an inch thick, it has always moisture underneath it. This power of absorption in a loose soil may account for its greater moisture, if there be no doubt about it, but I should like to be assured that this is the fact.

My object is more than to satisfy a curious inquiry. I have reason to believe that the firmer the soil is trodden round fruit trees growing on a light soil, apt to be scorched in summer, the more the trees will flourish. But if it be true that loose soil attracts moisture, then the more that in which my trees grow is trodden, the less moisture they will have, and moisture is above all things what they want.

I have looked into Thompson, Lindley, and Johnson, for information, without success. Perhaps best of all would be a soil beaten hard below, covered with half an inch of loose earth on the surface.—WYESIDE.

Loosening a soil by forking and other gardening processes, benefits in various ways the plants grown upon it. It enables the air to penetrate, and the oxygen and carbonic acid of the air are requisite applications to the roots of plants, and the moisture of the air is thus also deposited within the soil. Being so deposited, the looseness of the soil also checks its evaporation, for loose soil conducts heat, or becomes heated, much more slowly than the same soil consolidated, because the spaces between its particles are filled with confined air; air in a state of rest being one of the worst conductors of heat. A blanket is wrapped round ice to prevent its melting, because all woollens are bad conductors of heat, and one cause of their being such bad conductors, is that the spaces between their interwoven fibres are filled with air in a state of rest. That consolidated earth becomes heated more readily than the same earth loosed, has been proved by experiment. Tan and coconut fibre refuse retain the moisture beneath them for the same reason, between their fragments are spaces filled with confined air. Consolidating the earth over the roots of fruit trees is one of the most fatal of practices, and where it is superlatively effected by having the surface tamped so that no loosening is effected for instance of years, weakly trees with little of annual growth, but abundance of lichens on the trunks and branches, are the usual consequences.—EDS.

PLANT JUDGING.

I AGREE with Mr. Findlay that plant judging, especially in the country, where local influence is brought to bear, wants looking into. Here are three judges—A, B, and C. A and B know one another, and agree to back each other, and "smut" down the impertinent observations of C. A or B, on arriving at a class, says No. 7 is A1. Exactly so, cries the other. C knows better, and will know presently that he may as well hold his tongue, or agree with deaf and dumb men. If you put two professionals and an amateur together, C will probably represent the amateur.

I cannot but think that condemning names is all moonshine. I never saw fairer adjudications than at the Rose Exhibition at the Floral Hall, Covent Garden, where every man's name was attached to his box. We want men of calibre, who do not care about offending any one, client, friend, or not. The maintained high character and integrity of such men will be more beneficial to them than favouritism and nepotism. The names of the three judges should be written on the prize card, and they should each be made to write opposite their names "For" or "Against," as the case may be. This would make them cautious; and the people will then see their judgment, and, if competitors are disappointed, they will still be better satisfied. No doubt such a plan is open to objections; but erroneous judgments and intentional dishonesty are open to far greater. If men are

determined to be dishonest, I fear there is no other cure but to get rid of them. The publication of the names of competitors, and the judgments, will enable you to catch more easily (if guilty of palpable favouritism) nurserymen and amateur "chums," and nurserymen and amateur clients. As to country places, the nepotism is fearful.

I only throw out the above as a hint, which more experienced persons may improve upon. I hope false delicacy will never hinder any one from stating his objections to anything that I advance. Human nature is human nature, and I am not for allowing it the flimsy veil of mere nominal concealment. See the folly of it. I helped the year before last to adjudicate the amateurs' Roses with two good painstaking and upright judges, Mr. Wood and Mr. Perry. The first prizes fell in all instances most justly to Mr. Hedge. After I saw the name of Mr. Hedge affixed to class 1, I knew all his Roses in all classes; I knew them by the boxes, by the moss, by the mode of setting out, no less than by the superior growth of the Roses. I may say, from recollection, that he was only once nearly approached—viz., in the twenty-four singles, by Canon Fisher, of Sarum, our most distinguished western amateur. The very superior Roses in both lots stood in the relation of nineteen to seventeen, and in both cases the remainder were good. In country places the concealment of names is a farce. In London you do not want to conceal the names, because first-rate men are appointed, who, had they no conscience, know that the eyes of the horticultural and floricultural world are upon them. The "press" is there! The "press," in London, is a very good judge.

In conclusion, I think that professionals should never be secretaries of societies; that secretaries should not be allowed to accompany the judges, nor to entertain them; that the fairest judges in country places are the gentlemen's head gardeners; that getting distant judges, even leading men, by no means necessarily secures right and honest judgments. In all cases it depends upon the character of the men employed. I am for protecting judges, but I am not for allowing them to make capital out of the public property.

As regards objections made by competitors, they should be stated before the judges leave the show. No attention should be paid to them afterwards. Objections should never be made except where the erroneous or fraudulent judgment is palpable. Some allowance must be made for differences of opinion, or written rules for adjudication must be laid down.—W. F. RADCLIFFE, *Tarrant Rushton, Blandford.*

LA CONSTANCE AND SOME OTHER STRAWBERRIES.

I WAS quietly reading your Number of the 10th of January, when I was startled by the account H. Taylor, Esq., of Fencote, Bedale, gave of his plants of *La Constance* Strawberry. I at once posted off in search of my gardener and thus addressed him. "What do you think *The Journal of Horticulture* says of *La Constance* Strawberry? That the runners require to be potted and kept under glass during the winter; that it is to be feared it will not suit the climate of England." "Why, sir," he replied, "it is one of the hardiest Strawberries we have." "Exactly so," I said. "And now, can you tell me how many plants we have of this variety?" "Well, sir, there's that long row there. It contains more than 250 runners. Then there's in the border 50 plants I transplanted last September; and there's 90 plants in the Strawberry-bed which bore so well last summer. Besides these, I've a lot more in reserve, as I divided a few of the oldest plants last autumn. You've nearly 450 plants if all of 'em were counted up."

I state this in order to show that I have knowledge of, and acquaintance with *La Constance* Strawberry. I procured some plants of it years ago from that excellent frugarian, Mr. Nicholson, of Eaglescliffe, when he first sent it out. The summer following I was so pleased with the unrivalled flavour of the fruit, and the close compact habit of the plant, that I have caused it to be grown here extensively. I live in a colder climate than that of Bedale, and yet I am not aware that I have lost a single plant through frost or cutting winds. This variety of Strawberry has endured a

temperature of 12° below zero (for my thermometer placed on the ground at 9 o'clock P.M., on Christmas-eve, two years ago, indicated that extreme amount of cold), uninjured. Surely this is ample proof of its hardiness. It requires, however, good and patient treatment, for it puts forth its runners so late in the autumn that they are not able to gain size and strength sufficient to bear fruit the following summer. I will briefly state the mode of treatment adopted here with success.

In the autumn a trench is dug more than half a spit deep, a quantity of hotbed manure is spread in it and covered over with soil. Here the runners are planted 6 inches apart as soon as they are fit to be separated from the parent plants. They are watered if necessary from time to time, until they have rooted freely into the soil. About Christmas they are mulched with strawy manure, care being taken not to smother the plants. In the August following, another trench is dug about a spit deep. This is well manured, and covered over with soil to the level of the earth around. The yearling plants are taken up carefully with a trowel, and they are planted in this prepared ground in patches of two or three together, a space of 14 or 15 inches intervening between each patch. They are mulched again at Christmas. The following summer plants so treated have never failed to produce an abundant crop of first-rate fruit. The plants may be suffered to remain undisturbed for two seasons, when they should be again removed after fruiting into fresh ground well manured.

Carolina Superba and *Crimson Queen* receive the same treatment. All my other sorts of Strawberries yield good crops from runners the first year, they are then thrown away, fresh plantations being made yearly about the first week in August, if possible. I have not grown the *Empress Eugénie*, because Dr. Hogg in his "Fruit Manual," Second Edition, describes it as "Rather a coarse-looking and very large Strawberry, not remarkable for any excellency of flavour." I cannot see the advantage of growing these inferior varieties, *Eugénie*, *Victoria*, *Oscar*, and a host of others, simply because they are abundant bearers. Why sacrifice quality to quantity? Plant a row more of the finest varieties and the desired quantity is also attained.

The following sorts are the finest known, and they will satisfy every want:—*British Queen*, *Carolina Superba*, *Crimson Queen*, *Eclipse*, *Emily*, *Frogmore Late Pine*, *La Constance*, *Rivers's Eliza*, *La Chalonaise*. This kind, however, is not required where the *British Queen* succeeds. To this list may be added *Dean's Lord Clyde*, *Bicton Pine*, and *Elton Pine*. The last-mentioned variety, though not remarkable for flavour, is the best late Strawberry. All these I either have grown or still continue to cultivate in my garden, and can safely assert that they are perfectly hardy, unrivalled in flavour, and excellent for preserving.

It may not be generally known that plants of new or rare Strawberries when first obtained from the nurseries, often fail to exhibit their true character, and appear to be of a tender and delicate growth. Here, both *Crimson Queen* and *Frogmore Late Pine* did not show to advantage until their third summer—that is, until I had raised plants from runners grown here. This may account for the supposed delicacy of *La Constance* Strawberry.—A FRUGARIAN.

GLAZING WITHOUT PUTTY.

I AM glad to be able to give your correspondent some little experience on the above subject.

First, I do not think it advisable, if possible, so far as horticultural erections are concerned, except on Mr. Cranston's plan. Why I think so will be stated hereafter.

Some two years since wishing to add about 300 feet of glass to my houses, I purposed doing it with rafters and glazing thereon, as I had seen similar erections apparently glazed without putty. I elected to try the plan and save trouble and expense, so I consulted my handy man with whom the idea took considerably, being new I suppose, and we (for I must have a hand in the downfall of putty), having the rafters fixed, began to lay the glass on, beginning at the bottom in the most orthodox manner possible, when, alas! after about half an hour's trial we were forced to give in and confess to being beaten thus far, for if we could fix

not a pane would remain fixed. John wished his rheumatiz pains as unattached to him, as mine seemed likely to be without putty to my greenhouse. Now, the bright thought illumines our faces, it's as good as done. At it instantly, knock in a couple of tacks to keep up the first pane, and a little tin or lead hook for each succeeding one. Now, we go ahead, covering so much space that, with full employment at 14 a-foot for glazing, I saw, or thought I saw, clearly how our Keiks and Cubbits had made such fortunes; and as to seed-sowing, being summer time, I must confess I was rather false to my old love, and thought glazing without putty at 14 per foot was the right thing after all.

Hark, what do I hear? "John, what are you doing?" "Nuthin, run!" "What noise is that?" "Why the glass rattling!" Yes, it was only the glass rattling, but that glass-rattling was on the roof of my new house, and I then thought that if it rattled like that in such a trifling breeze, it would surely not only rattle but break with an ordinary wind. What's to be done? Why, of course, peg each pane down! How! With some nice V-shaped bits of tin. That's it! Off to Bill Smith's the tinman, who cut 'em to a tee, and not very long about it, and charged but a trifle for it too. Right we were, at least we thought so, so we inserted four of the tin wedges to each pane of glass (12 by 18's), and that day we heard no more rattling of glass.

Thus far, so good, and our glazing was again looking all right, but being about teatime, and as John could go watering, I thought a little cogitation on the subject would be valuable, so I weighed the pros and cons, and fancied the latter considerably the heavier, so I stopped the work to try an experiment as to how far glazing without putty would be watertight: supposing I had eternally settled the "wind-tightness," so I poured water on the roof from a watering-pot with a moderately fine rose, about 4 feet above the glass, and the result was the glazing would not act at all, the water permeated under the edges of the glass and down the inside of the rafters into the house in a continuous stream, not in a drip. This was an experiment, and I must confess not at all satisfactory.

Glazing without putty was now at a considerable discount, so I found John another job for a day or two while I waited to be sure it was done thoroughly, a small portion of the work with some thick paint, which I well worked in by the sides and on the rafters, and on the glass the width of the rebate, and which answered splendidly for the first or lowest pane of glass, but on the upper panes where each rested on the other it gradually soaked under each and down the under pane in a most provoking style, and no film would suggest itself this time as a remedy, except to put in dry paint, and I concluded glazing without putty, except as aforesaid, was a failure for greenhouses.

Yet I did not give up, but had some thin putty made and placed it on the rebate of the rafters as in the first process of ordinary glazing, placed the glass on this, which with trading pressure minutely rubbed up all the little spaces and did not run down the glass, pegged the glass down, used the little hooks and nails to keep each pane in its place as before, and laid on the thin coat of paint well worked into the rebate, and on the glass about a quarter of an inch on each side. In a few days when a little "set" I took off the putty pressed out in the rebates, and gave the rafters a coat of paint well worked in up to the glass, and so far all was as perfect in every sense as glazing, and possibly better, and was this summer perfectly air and watertight; but I would recommend an annual coat of paint, if possible, to such glazing, as the paint is apt to peel off the glass and look ragged and shabby. All who saw it considered it a good model of glazing, and did for some time; but two years' experience tells me that so far as I am concerned the old mode of glazing with putty is better for the reason—glazing in the above mode must be done perfectly and in good weather, and painted as quickly as possible after placing the glass, consequently, the old whitish putty, and sometimes as it were into a kind of cement, the action of the weather still hardening it, so that I found it almost an impossibility to take out broken panes, even as they should be, to replace with new ones without each time cutting away the wood-work, not to mention sundry panes broken from the extreme difficulty of "hacking out." Such difficulty I have rarely

found when they have been glazed with putty, as however hard the top may be, it by excluding sun, and with the moisture, &c., inside, keeps the putty under the glass, unless very old and dry, in such a state as to be easily scraped from the wood; therefore, I am again all right with my old love, and hope to avoid another putty trial, and that my experience may be some guide to your correspondent.—R. H. PORTER, *Tonbridge.*

Your correspondent can glaze without putty provided he gets glass made with the outside edges turned up—the glass to be in the centre of the astragalus. The glass may be any length he chooses. Over the squares of the glass thus met he must have sheet iron bent, with small holes in the sheet iron to allow of small screws being fixed at regular intervals along the astragals, then small nuts to screw down the sheet iron as tight as he pleases. To keep the glass from slipping he must use small zinc hooks hooked both ways.—R. M. M.

OBTAINING SUPERIOR PEAS AND CABBAGES.

THERE are few crops of more consequence than a good crop of Peas in summer and autumn, and plenty of good sound white Cabbage in winter and spring; for next to Potatoes, there are, in reality, no vegetables which are more general favourites, a dish of Peas forming as agreeable an addition to the table of the poor man as to that of the wealthy. Like the Potato, Peas require very little to make them palatable, whilst undergoing the cooking process, so there is no reason why the poor man should not enjoy them as well as the rich.

The season is now nearly at hand when something must be done in the way of providing for another year. I believe there are few that had anything to do with gardening last year 1884, but found it a very dry season, and all vegetation suffered more or less, especially Peas. A few words as to how I managed to have plenty may not be unacceptable.

Having entered a new situation, I soon learned that plenty of Peas, early and late, would be called for, and being nearly Christmas, I began to examine the soil of the garden, to see if it had been trenched lately. To my disappointment I found the subsoil as hard as stone, and having been dug above 6 inches deep for many years. Now, common sense told me at once that Peas would not produce a satisfactory crop in such soil. What was to be done? I had no time for trenching, for other work was going on at the time, and I wanted a few Peas sown at once. I cut with a trench 18 inches wide and 1 foot deep, partly manured it with dung, well mixed it, and sowed my Peas. I sowed two rows this way, and two rows were sown afterwards, only digging the ground. The consequence was, plenty of Peas, but only in the rows where the soil was trenched.

The early sown were Daniel O'Rourke, in the rows trenched, and Dillston's Early in the other two rows. I gathered from Daniel O'Rourke ten days earlier than from the Dillston's. The former variety being strong and healthy, earned a good crop, whilst the plants of the latter were very weak, and very few pods were raised from them.

I also sowed this practice all the summer with other sorts, as I succeeded, by sowing Champion of England, sown's Dwarf Champion, and Tenny's Perfection, with excellent results, but say from the rows that were in the ground trenched, and low attacking the two rows in the ground, not trenched, some time before they were in the ground, I had abundance of Peas all the summer and autumn, till the first week in November, when a slight frost came and cut my two last rows wrenched in the ground. If I had had materials for covering them, such as glass, or straw, I should have had good Peas in November.

I must not forget to say I mulched the rows with Mushroom dung, and short grass, and gave them a good watering twice a week.

I sowed my Scarlet Runners the same way, and with the same success.

Before I put in my third sowing of Peas, the weather being so hot and dry, led me to believe that Cauliflowers, and early Broccoli, for winter use, would be scarce, also

that the Broccoli would be very small. I pricked out an extra quantity of Cabbage, in sorts, about five hundred plants altogether, and as I cleared away the early Potatoes, Cauliflowers, and early Peas, I planted Cabbages, keeping the plants alive by a watering now and then. Thus I had by October an excellent lot of good Cabbages. I had a six-light frame not in use, I pulled them up, taking the loose leaves from them, and laid them in leaf mould close together. The pit held the lot. I turned them back and cleaned them every three weeks, and I have now enough of good Cabbages to last me till April, and they are quite equal to spring-grown Cabbages. The sorts are Wheeler's Imperial, Enfield Market, and Nonpareil. I find Wheeler's Imperial keeps the best. This is a good practice where families do not care for Savoye.—H. COMLEY, *Gardener, The Hendre, Monmouthshire.*

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE general preparation of ground for the spring crops having been delayed, no time should now be lost in forwarding the necessary digging and trenching, preparatory to the more thorough preparation of the soil before sowing-time. The principal causes of success in growing vegetables are a fine tilth, and as great a depth of earth as can be obtained without interfering with the subsoil, if the latter is of a sour nature. Clayey and retentive subsoils should, however, be forked over, loosening the ground to some depth. This will facilitate the passage of water from the roots, and by degrees the subsoil will become improved. There are but few vegetables which do not require a medium depth of 2 feet to grow in—some more, and hence the necessity of deep well-pulverised soil for their successful cultivation. To be effective the manure should be completely mixed with the soil to its full depth. For the present, therefore, the dung may be dug in in the process of trenching, and its thorough incorporation with the soil will be best effected when the ground is again worked over with the three-pronged fork. Respecting the application of manures to different soils, we may observe that for warm dry soils such as are of a cool nature, as cow or pig-manure, should be applied; horsedung will answer best in medium loams, while on stiff clayey soils a portion of ashes, road-scrappings, old mortar, or refuse of any kind, may be used in addition to ordinary manure. They will help to keep the land porous, and consequently assist the roots of growing crops to permeate the mass of soil. Old Cabbage ground, which has been under Sprouts since last August, will now become available for other purposes. Where plenty of Coleworts have been provided some of the latest of the July sowings will supply their place, and stand over for early Cabbage. Old Cabbage ground should be trenched and pretty well manured, as the Cabbage is a scourging crop. It is generally followed by a second sowing of Peas; the Peas in their turn are succeeded by Celery-beds, and this course prepares again for any of the Brassica tribe. *Cauliflowers* may be turned out of their pots, putting four strong plants under each hand-glass. See that the spring-sown do not "draw" if raised in heat. Let them be pricked-out betimes. *Spinach*, a small sowing may be made between the rows of early Peas.

FRUIT GARDEN.

In the orchard get all planting finished as soon as possible, and stake and mulch. Remember to drain thoroughly. Nowhere is this advice more necessary than in the orchard. Although Apples and Pears are fond of adhesive soils, they will never prove profitable where water is allowed to accumulate. Examine all old or overborne trees. Many trees of this character may soon be recovered by applying manure at the extremities of their roots, and also by a good top-dressing.

FLOWER GARDEN.

Wherever a high degree of keeping is required in the pleasure ground, nothing tends so much to their beauty as a close velvety lawn. It often, however, requires considerable trouble to secure this desideratum. On rich soils the coarser grasses prevail and are difficult to eradicate or keep under, while on soils naturally poor and which have been for some time under the weather the different kinds of mosses

are found to increase in a manner prejudicial to the better sorts of lawn grasses. As the present is the season when the mosses attain their greatest perfection, it will be found the best time to eradicate them, and a sharp-toothed iron rake or light drag will be the best implement for this purpose, working it sufficiently to bring up the mosses, which should be cleared off and the lawn left for some time, when a second operation may, perhaps, be necessary. In March sow thickly Sheep's Fescue Grass and Crested Dog's Tail, and apply a dressing of lime rubbish and fresh soil, or the latter and fine bone dust, which with occasional rollings to keep the ground firm will soon produce a good sward.

GREENHOUSE AND CONSERVATORY.

A slight advance in heat may be made on bright days, but if cloudy skies intervene, revert immediately to decreased warmth, and let the humidity be in the same ratio. Those who are growers of Epacris, Correas, Leschenaultias, Polygalas, &c., will soon enjoy a rich treat in those charming tribes. Camellias at this time require abundance of water. Keep a sharp eye upon Ericas, Epacris, &c., that are pot-bound, some of these will require liberal watering. In addition to keeping the conservatory gay with blooming plants let the arrangement of the interior be occasionally changed, by grouping the plants somewhat differently and adding a few striking ones, as some of the hardiest Palms, &c., for effect. Orange trees in tubs are liable to be affected by a black fungus on the leaf, having the appearance of soot. This should at all times be thoroughly cleaned off. A little soap-suds, warm, with some sulphur mixed with them and applied with a sponge is a good remedy. Fuchsias may now be put in a little heat to start them for cuttings. Such as are wanted for early bloom may be pruned-in preparatory to disrooting them. Pelargoniums for early blooming will now require careful training. Thin out the shoots where too crowded, and tie-out the rest in the desired form. Fumigate on the first appearance of green fly, as it will save much after-trouble.

STOVE.

The plants here will in general now require an increased amount of atmospheric moisture with a slight advance in heat. We prefer such advances to be for the most part on the afternoons of bright days, when the solar heat may be enclosed, and with a moist and wholesome atmosphere. Begin to repot Orchids, taking them exactly in the order in which they bud. Be sure that your material is scalded or half charred to destroy insects. Keep the plants well elevated and use plenty of charcoal in lumps of considerable size, fastening the whole at least so that the plant cannot be loosened by gentle shaking. Sphagnum or other moss pegged on the top makes a good finish, and is to be recommended in houses which are unavoidably deficient of atmospheric moisture. Syringe plants on blocks occasionally. Keep a sharp eye on insect-baits at this time.—W. KNEALE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

HERE the work done out of doors, owing to the snow, has been very limited. Removed on Thursday the covering from Cauliflowers, Lettuces, Radishes, &c., which had thus enjoyed a night of fully a week, and looked none the worse of it. As the weather becomes milder will give them all the air and light possible. With this object, washed in a thawing day the glass underneath which Potatoes and Peas are growing in pots. Gave also all the light and air possible to Asparagus in frame, and would introduce more, but that we are a little short, and also uncertain as to when it will be most wanted. Planted two frames of Potatoes, the beds having just a little bottom heat from tree leaves, planting rather thickly and putting the earth about them in ridges, so that some temporary things may have standing room between the rows. Finding we were deficient of material to make a slight hotbed just now for early Carrots, sowed some in boxes, so that they may be placed where there is a little heat, and be hardened off by degrees. We will, however, have a two-light box as soon as possible, as a bed of Forcing Dutch or Early Horn Carrots is one of the most useful things about a garden. We always think such quick-grown little dots have a sweetness peculiar to themselves. Re-

putted some nice little Cucumber plants that were growing in a handful of leaves. We have seen some of our old gardeners do this at the back of the frame, with a thick cloth covering themselves and the opening that the plants might not suffer—a rather different thing from carrying such tender plants all exposed in a sieve to the putting-shed. We choose a medium course. We had the plants under some little wooden, bottomless boxes, but with a glass movable top inside the frame. The plants were taken out quickly, placed in a deep basket half filled with warm leaves, and were then carried with a thick cloth over and round the basket to a warm stove-hole shed, where pots and soil had been previously warmed ready for them, the pots all drained, soil in the bottom, &c., and warmish water all ready, so that the shifting was soon done, and the plants were quickly put back again by means of the warm covered basket, the bed being nicely forked over whilst the shifting was being done, in the close warm place.

In reference to the mischief accruing from sudden changes of temperature, a correspondent thus writes:—"What you said last week is all true about sudden extremes. I used, though only an amateur, to be very successful with Cucumbers. I was done one year, and I have always thought that my most successful rival had something to do with it. He noticed me taking some things very carefully from the bed into my little workshop, and then he came to talk about some long-winded story. I thought I had shut the door all right, but no, I left it open, and when I was at liberty my poor little plants were in a pitiable plight, and with all my coaxing they did no good afterwards. Thus I was regularly beaten through that good-natured chat." Well, it might be so—the leaving the door open was quite sufficient, without indulging in any uncharitable surmises. But why not have been straightforward, and told Mr. Pry to wait until you had done your job? The truth most likely was that you were determined your rival should not see your fine plants. Such hiding will soon be classed with the things that were, and when the knowing ones are caught at times they may expect to have the joke against them.

Mushroom-beds.—These have been producing heavily, and as we were obliged to sprinkle a little litter on the beds in severe weather, we have had it taken off, and swept the beds with a hair broom, so as to leave all clean and firm, then sprinkled gently any part that seemed a little dry, and we have no doubt that we shall have plenty more. At this season we prefer a little moisture in the atmosphere to much watering. A month or two hence water may be applied more freely if the beds are at all dry, and some manure water from sheep or deer-dung will be more telling than clean water. Beat down firmly another piece that had been spawnd about ten days ago. The beating firm is so far a preservative against woodlice. Do what we may we are always troubled with them as the spring comes on, and there is nothing for it but scalding and trawping. We have no doubt we take them in with the litter and the dung, for it is rare to be able to find one in the autumn after we have cleaned out the house.

Sudden extremes are also bad for Mushroom-beds. We have seen a bed covered up and producing well, all uncovered to gather the produce, and left uncovered and exposed until the bed was chilled, and the working spawn next to killed, so that when the owner went, expecting to gather a basket of fat juicy Mushrooms, he obtained nothing but little dots of brownish buttons, as tough as a blacksmith's apron.

We think we mentioned about double spawning an elevated spawnd-bed, and it has done pretty fair on the under side, giving us some very large Mushrooms protruded through the spars. The bed altogether is about 15 inches deep. A little long litter was placed on the spars, then the mat with the grass side uppermost, all being made regular, with a little loam spread over the opening; on this a little of the dung materials for the bed, and on this spawn in little bits. The material was of such a nature that there was no danger of overheating, especially at the bottom. The bed above was treated just as beds are generally treated. Though these Mushrooms can be had from both sides of a raised shelf bed, except for getting a dish from the under side on an emergency, we do not know if there is in the peculiar system a great deal to recommend it.

We have put in a little more material to help to make

another little piece of a bed on the bottom or floor of the house. The bottom part is chiefly fresh long litter from the stable: on that are placed some droppings that had been thrown together for a week. This would throw up rather too much steam in the house at this season, and, therefore, we cover it over with rough, lumpy, dry loam to keep down the moist steam. This soil is much better than wasting the manure by drying it too much beforehand. When people are scarce of material they must make the most of it. One of the finest beds we ever had was formed chiefly of old stable, with a casing over it of rather rotten dung; but for all that we prefer about equal parts of droppings and litter cut small, so as to mix intimately. At this season when droppings, unless they come direct from the stable, are apt to be too damp and wet, a little chopped straw, or dry litter chopped, will make it all in good condition. If even then the bed should be rather damp for receiving the spawn, a fine produce may be obtained by wrapping each piece of spawn in a handful of dry litter.

FRUIT GARDEN.

Looked over fruit-room, pruned a little in orchard-house, damped the Vines breaking, sprinkled Peach trees, and set Strawberry plants in bloom in the best positions we could muster for light. It is a great advantage to have a place for everything, but in these days how few can command such conveniences! Among the thousands who relish their early Strawberries how few there are who have a Strawberry-house, where the plants can be placed and remain until the fruit is gathered, as in the beautiful Strawberry-house at Enville. In all these places we reduced the temperature considerably during the storm, for what was the use of a high temperature when the days gave us nothing but fog and snow? The point of safety in all such cases is quite high enough as respects temperature, and the plants will be found strong and sturdy to take the advantage of the sun and clear days when they come. The snow was rather more than a foot deep in this neighbourhood; as it is now melting fast, and filling the pools and reservoirs, it is also filling hearts with gratitude that they will not now be likely with-out water until the springs rise in the wells.

We are sorry that some amateurs with small greenhouses against the walls of their dwelling-house have suffered from the snow from the roof of their houses falling and crashing through the glass of the greenhouse. We had thus a score of small squares broken ourselves. The roof of the dwelling-house had been altered, and in attending to the roof of the mansion we forgot our own, and at night the slip of the snow went clear over the spouting and in through some of the glass. In all such cases of lean-to's where there is a high roof above them, some sort of parapet should be erected to prevent such an accident; or when a heavy fall of snow takes place and there is a prospect of a thaw, a covering in the shape of shutters or thick canvass should be placed over the lower part of the greenhouse roof, as it will be easy to tell where the snow is apt to fall after it pinches past the spouting.

On steep roofs the snow remained only a short time; but on flatter roofs, as on the late vinery, it lay well, and thus gave a good protection to the Grapes, and we took care not to give as much heat below as to melt this snow whilst the frost lasted. The snow also protected all vegetables and young crops out of doors more effectually than could have been done in the sharp frost by any other means.

ORNAMENTAL DEPARTMENT.

Out of doors nothing has been done here, except clearing paths of the snow, and placing a good portion of it about the garden so that it would find its way to our reservoirs as it melted. If it had continued we thought of having a snow plough made for the roads and walks. For the former a good plough is formed of three strong planks, say 2 inches thick, 10 inches deep, two 8 feet long and one 6 feet long. The 6 feet forms the base of the triangle, the two others the sides terminating in a point, to which horse-power is attached; the handles are placed at the base. The three sides are strongly braced together, and if the snow is deep there is a heavy weight placed on the tracing or the box thus formed, or a man sits or stands there to keep all clear. For one or two men, for garden use, one about the third of the

size and much lighter is very useful where snowstorms are frequent.

In snowy days washed pots, cut tallies, made stakes, split wood, sharpened tools, put soil in warm places, picked over plants, regulated creepers and twiners, &c., washed stages, &c., and proceeded with potting, making a temporary bench in some of the houses to save the trouble of taking the plants out and bringing them back again in the cold. The top of the furnaces, and even the pathway of the Mushroom-house, are capital places for warming soils, almost as good as our amateur's hearthstone if the mistress of the establishment can be coaxed into permitting such encroachments on her domain.

Calceolarias.—Uncovered the pit of shrubby Calceolaria cuttings that had been made snug by the snow for a week. One light, we noticed, looked a little yellow, all the rest were quite green. The above pit-light will be all right after a few days of mellow light. The young things there had begun to grow, the green ones had grown less, and, therefore, suffered from darkness less or none at all. Let us again impress on our young readers the fact, that to withstand uninjured continued darkness the inside temperature must be so low that the plants shall have no inducement to elongate. If they do the seeming growth will become sickly and of a yellow tinge.

Any large plants saved, intended to bloom early in pots, should now receive their last shifting into good-sized pots, and into rich loamy soil well firmed round the balls. Such plants are useful for early blooming. To get late flowers from shrubby kinds in late autumn and the beginning of winter, either autumn or spring-inserted cuttings should be used, be turned out in May into a shaded border, no blooms permitted in summer, and the plants raised and repotted carefully in September.

Herbaceous Calceolarias sown in July and August should now be repotted and placed on a cool bottom near the glass, all the light possible given to them, and plenty of air when the external temperature is above 38°, and cold water used for watering when necessary. A good compost for this section is equal parts of good loam and very sweet decayed leaf mould, and half a part of sand. In April and May few things are more beautiful than a shelf or house of these pretty plants. For seedlings, pots 6 or 8 inches in diameter are quite large enough, but for approved kinds there is no limit to the size of the pot, or the size to which the plant may grow from a nice hotbed little plant in the autumn. When huge plants of these herbaceous Calceolarias are desired, it is always best to commence with a young plant, or a piece of an old one, but not to continue shifting an old plant that has bloomed. A plant with a single stem in September by frequent shifting all the autumn and winter may fill the largest pot before it blooms, if afforded all the little attentions it needs. Among these are plenty of sweet air, and a cool, moist, medium to stand upon, and if this healthy coolness is given there will be less need of tobacco smoke, though it should be used, and but moderately, whenever more than two or three green flies are discovered, supposing that these two are at once nipped up as soon as they are seen.

Cinerarias.—Watered the most forward with weak manure water. Potted younger ones and approved sorts, bearing in mind that whenever large-flowering plants are wanted the balls must not become pot-bound until a short time before you wish them to show bloom. This plant is more easily injured by frost, and is nearly as much averse to heat as the Calceolaria. Both will enjoy a great amount of sunlight and a very fair proportion of sun heat, provided the roots are moist and cool. Bottom heat, unless for particular purposes, is the abomination of both.

Chinese Primroses.—Watered with manure water those in full bloom. Shifted successions, and potted young plants. In dull, damp, foggy weather, when the soil becomes dry, avoid spilling water on the stem or the heart of the leaves, or gangrene or rotteness is apt to follow. This should be particularly avoided in the case of the double varieties. These, too, will also like a warmer temperature than the single, semi-double, and fringed kinds. In crowded conservatories the double kinds should stand elevated on reversed lower-pots, so that air and light may permeate all round them. If the least speck of damp or mouldiness appears on the collar or the base of the leaves remove it carefully,

using a small pointed knife if necessary, and fill the place and the surroundings with fine powdered charcoal, with a little powdered chalk or mild lime in it, and after a few days shake off the powder and use it again fresh bruised. These are useful for many purposes, as the bloom stands so well, which cannot be said of the single kinds, however beautiful and interesting they look.

As to Camellias, Azaleas, Epacrises, and other hardwooded plants, we must refer to previous Numbers, and also as respects the forcing-house or pit; we have only to add, that as respects Dielytras, Lily of the Valley, Roses, Deutzias, Rhododendrons, shrubs, &c., all will now force more satisfactorily than they would have done before Christmas, and for all of them a slight bottom heat and a gradual increase of top heat will suit them well, bearing in mind that nothing is gained by sudden rises of temperature, and that Nature performs all her great operations gradually.

But we must leave all these to oblige by answering here the request of a lady as to Lobelia speciosa, and we do so by saying, that we would rather not decide whether the blue speciosa, or the lighter Paxtoniana and Gordoniana, and several others are best, as we really believe they are all good, and that a decided superiority in either will depend more on our own tastes and culture than on the direct intrinsic merits of the varieties; and then as to obtaining lots of these varieties, we decidedly say, for all small beds that are wanted to be first-rate and unique, and thoroughly alike in tint and habit, propagate every plant carefully by cuttings. Where vast quantities are needed, as for ribbon-lines or edgings, and strict shade is not so much a matter of consequence, then the best plan would be to sow the seed saved, and prick off and prepare as fast as possible until the end of April. The seedlings will cost far less trouble, and most likely they will stand through the autumn better. We believe the long lines of blue Lobelia speciosa at Enville were all raised from seed. You must now set about either sowing or propagating, according to the quantity you want, or better try both plans, and then give us the benefit of your experience, as we are all learners.—R. F.

COVENT GARDEN MARKET.—FEBRUARY 4.

There is a fair supply both of out-door and in-door produce. Apples are still plentiful and good, consisting of Blenheim Pippin, Russet, Court of Wick, King of the Pippins, Stamford Pippin, Old Golden Pippin, Golden Knob. Of good dessert Pears there is a short supply. They chiefly consist of Beurré de Rance, Easter Beurré, Jean de Witte, No Plus Meuris, Colmar, and Passe Colmar. Grapes have advanced in price, but are still very good. Some new ones may be had, but they are not equal to the old ones at present. Pines are scarcely sufficient for the demand; Oranges and Lemons abundant. Greens of all kinds, notwithstanding the late severe weather, are brought in quantities sufficient to meet all requirements. The usual imports from abroad are well kept up, and to the articles named in previous reports we have to add Artichokes. Asparagus is more plentiful; Spinach has advanced in price; of Rhubarb and Sea-kale there is a good supply.

Is a good supply.										
	s.	d.	s.	d.		s.	d.	s.	d.	
Apples.....	½	sieve	1	0 to 2	0	Melons.....	each	0	0 to 0	0
Apricots.....	doz.	0	0	0	0	Mulberries....	punnet	0	0	0
Cherries.....	lb.	0	0	0	0	Nectarines.....	doz.	0	0	0
Chestnuts.....	bush.	14	0	20	0	Oranges.....	100	5	0	10
Currants, Red...	½	sieve	0	0	0	Peaches.....	doz.	0	0	0
Black.....	do.	0	0	0	0	Pears (kitchen)...	bush.	5	0	10
Figs.....	doz.	0	0	0	0	dessert.....	doz.	3	0	6
Filberts.....	100 lbs.	40	0	0	0	Pine Apples.....	lb.	6	0	0
Cobs.....	do.	50	0	60	0	Plums.....	½	sieve	0	0
Gooseberries...	½	sieve	0	0	0	Pomegranates...	each	0	6	1
Grapes, Hamburgs	lb	7	0	12	0	Quinces.....	½	sieve	0	0
Muscats.....	8	0	14	0	0	Raspberries.....	lb.	0	0	0
Lemons.....	100	5	0	10	0	Walnuts.....	bush.	14	0	20

VEGETABLES.

		s.	d.	s.	d.			s.	d.	s.	d.
Artichokes	each	0	0	0	0	Leeks.....	bundle	0	2	0	0
Asparagus	bundle	10	0	15	0	Lettuce.....	doz.	1	0	2	0
Beans Broad.....	½ sieve	0	0	0	0	Mushrooms.....	pot	1	6	2	6
Kidney.....	100	2	6	5	0	Musht. & Cress, punnet	0	2	0	0	0
Beet, Red.....	doz.	1	0	3	0	Onions.....	bushel	5	0	7	0
Broccoli.....	bundle	1	0	9	0	pickling.....	quart	0	6	0	6
Brussels Sprouts	½ sieve	2	6	3	6	Parsley.....	½ sieve	3	6	5	6
Cabbage.....	doz.	1	6	3	0	Parsnips.....	doz.	0	9	1	0
Capicums.....	100	0	0	0	0	Peas.....	quart	0	0	0	0
Carrots.....	doz.	0	5	0	0	Potatoes.....	bushel	2	6	4	0
Cauliflower.....	doz.	2	0	6	0	Radishes doz. bunches	0	9	1	0	0
Celery.....	bundle	1	0	2	0	Rhubarb.....	bundle	0	8	1	0
Cucumbers.....	each	1	6	3	0	Savoy.....	doz.	1	0	2	6
Fennel.....	score	2	6	3	0	Sea-kale.....	basket	1	6	2	6
Garlic.....	doz.	0	3	0	0	Spinach.....	doz.	4	0	8	0
Garlic and Shallots, lb.	0	8	0	0	0	Tomatoes.....	½ sieve	0	0	0	0
Herbs.....	bundle	0	2	0	0	Turnips.....	bunch	0	3	0	0
Horseradish	bundle	2	6	4	0	Vegetable Marrows doz.	0	0	0	0	0

BOOKS (A Constant Subscriber).—The first book you mention is very good, but Hogg's "Vegetable Kingdom" is far superior to the other. (J. C.).—Hemfrey's " Rudiments of Botany," and Hogg's "Vegetable Kingdom" will give you ample instructions. They are both small in price.

PLANTING VINES ON A FLOVE (Delta).—If we understand you aright, your fine, along the back wall, is so low, and so close to the wall, that you cannot well have a border of any sort there, without going over the top of the flue. If so, then, the covering the flue at each end, where you wish to plant a Vine, with a flagstone is a good plan, as it will give a little bottom heat. Three feet square is not large for a Vine, but it will do for several years. Place 6 or 8 inches of drainage over the flag, with a hole to let out extra moisture, and from 20 to 24 inches of good loam over it, with half a bushel of broken balled bones, and a bushel of horse-droppings to each place, nicely incorporated with the soil. After two or three years, if the Vines are continued, you will have to top-dress with rich manure, such as best cow-dung, or 4 ozs. of guano, or 1 lb. of superphosphate of lime at a time. A white Grape, planted in such circumstances, ought to be in two or three weeks before the Hamburgs planted in front, if you plant such kinds as the old Dutch Sweetwater (the earliest Grape), Buckland Sweetwater, or the Royal Muscadine. The two last are early Grapes, but not so early, in our experience, as the Dutch Sweetwater; but the latter requires more trouble in setting, but there need be no difficulty, if, as stated lately in "Doings of the Last Week," you just gently draw a dry hand over the bunches when they are in bloom, for several days in succession, and especially if you happen to get an hour's sunshine. These are all sweet Grapes, of what we may call the sugar and water kinds; but if you wish in addition a very rich aroma and Muscat flavour, we would recommend the White Frontignan as a free bearer and early ripener. To our taste, though the berries are small, it is far richer than any of the Muscats. We have mentioned none of the latter, because, under the same circumstances, the Frontignan will ripen from a month to six weeks before the earliest we have met with. We are glad our former answers were found useful. Such information makes duty a pleasure.

STANDARD VINES IN POTS (Ruby).—Vines can be grown as standards in pots by disbudding the lower part of the Vine-stem, and leaving three or four buds at the top to break; but to keep them in continuous bearing two things are necessary—rich feeding and moderate cropping.

ORCHARD-HOUSE IN SCOTLAND (J. Beckett).—We quite approve of a flow and return pipe in such a house; but then that takes away from the character of an orchard-house and makes it one of a general character, as an orchard-house, properly speaking, should have no heat but sun heat. That extra heat must neutralise to a certain extent the low position of the house. In fact, with such heat to counteract vapours, the low position, 80 or 100 feet below the surrounding ground, ought not to have told much against the site if there was a free opening to the sun's rays. With fruit trees on walls the position would have been bad without extra protection, but in a heated house the position would tell less unfavourably. We think there must have been something besides the position. What about ventilation? A little at the apex might be necessary, or at least an opening at the apex over each doorway. Probably too much air was given at the sides at once. Though we would have liked a better site there seems nothing insurmountable to anxious effort.

PLANTING VINES (Amateur).—There is no objection whatever to planting the Vines in the middle of the house, either two together or one, and then train that one up and down. Some time ago we described a splendid vinery at Wrotham Park, where the Vines are so planted. We have also mentioned several cases where, in such a house, with the border inside, the Vines were planted against the back wall, and also a yard or so from the front wall. It is a mistake to suppose that the mere place of planting is a matter of so much moment. Vines raised from a single bud are generally preferred; and if, instead of grumbling at 3s. 6d. per plant, you obtain strong plants at 5s., or even a little more, you will have made a better bargain than if you had paid 2s. for a small plant from a layer, the wood of which is likely to be poorly ripened.

CINERARIA STEMS AND ACHIMENES DECAYING (An Amateur).—We can only account for the stems decaying through drip falling upon them, or the supply of water being in excess of the requirements of vegetation, which will cause a soddened sour soil, and consequent decay of the roots, and ultimately of the stems and leaves. It may be due to something pernicious in the soil; but, without data on which to form an opinion, we can only hazard an idea of the cause. Send us a leaf or two, and part of the decayed stem, and these, with further particulars, may enable us to give a more decided reply. We may state that the temperature is too variable for Cinerarias. A temperature of from 45° to 50°, at this season, is quite sufficient for blooming plants; 65° from fire heat is hot enough for a Pine Apple. The Achimenes are destroyed through bad packing, and their being subsequently kept in paper packets. You have done well with those remaining sound; and you would have done better had you placed them all in sand, or any light, dry, or but slightly moist soil, as soon as received. They may be kept in a dry place, free from frost, until potted. The cause of the roots rotting is their being insufficiently ripened before you had them, or their being kept in wet soil.

HEATING BY GAS (Idem).—We have known a house, 33 by 15 feet, economically heated by hot water, the heat being furnished by gas, it being kept at greenhouse temperature at a cost of 3s. 4d. per week; and the plants did well in it, besides being so cleanly in operation. This apparatus was Clarke's New Gas Hot-water Apparatus, and we have no doubt it would answer your purpose well. We also hear good accounts of Mussett's Patent Hot-water Apparatus, which will heat either with lamps or gas. Our practice is not to recommend dealers. Your best plan would be to consult those who advertise in our columns. Write to them, stating your wants, and they will furnish estimates, stating how much they would furnish the apparatus for.

WATER FLOWING OUT OF SUPPLY-CISTERN (A Subscriber).—Under such circumstances it would be as well if the supply-cistern communicated with the bottom of the boiler. We presume it now is in connection with the low-pipe, and the pipe in the house to be heated is considerably below it. The air-pipe should be at the highest point of the pipe that goes round the house. We confess we do not quite understand your description nearly so well as a section of the boiler, cistern, and heating-pipe would have enabled us to have done. At present we would either take the pipe from the supply-cistern to the bottom of the boiler, or make the cistern double or more in size to allow for the expansion and contraction of the water.

PELARGONIUM LEAVES SPOTTED (T. B. Thorpe).—The leaves were spotted from an excess of damp air, and the parts spotted have had moisture on them for some time. You have no doubt done the best to remove the evil by giving an abundance of air, but this, in a cold frame, during muggy weather, is often the reverse of a source of dryness. Your only remedy rests in keeping the air drier by applying a gentle fire during damp weather, accompanied with air. Keep the leaves dry and they will not spot.

WOODLICK (A Tormented Subscriber).—We have nothing to add to what we said last week, page 97, on this subject.

NAMES OF FRUIT (J. Sandy).—2, Carlsle Codlin; 3, Very much like Flower of Kent; 4, Dumelow's Seedling; 5, Chaumontel. We cannot make out No. 1. It is an excellent Apple. (D. J.).—1, Wormley Pippin; 2, Dumelow's Seedling; 4, Lewis's Incomparable; 5, Ord's Apple; 6, Augustus Pearmain; 7, Beauty of Kent; 9, Hunthouse; 10, Northern Greening; 14, Cockle Pippin; 16, Flower of Kent; 18, 19, and 20, Augustus Pearmain; 21, Scarlet Nonpareil; 22, Winter Hawthornden; 23, Margil; 25, White Nonpareil; 26, Norfolk Beefing; 27, Winter Queen; 28, Is not this the same as 5? 29, Golden Winter Pearmain; 30, Northern Greening; 31, London Pippin.

NAMES OF PLANTS (A. B. C.).—Your Fern is *Stenochloa tenuifolia*. (Fred Silva).—Yours is *Asplenium palmatum cristatum*, but not quite so well created as the specimen you mention. Yours may improve as it gains strength. (M. D.).—It is *Cyanotis vittata*, often called by gardeners *Tradescantia sibirica*. It is a trailing stove perennial of the natural order Spider-worts, and requires the same cultivation as the other stove species. It is a native of Mexico. Does well for hanging over the edge of suspended baskets in which other plants are growing. (A. Broadclister).—*Erica colorata*. (C. B.).—*Eleusine indica*, a widely-distributed grass, found in warm countries of both hemispheres.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY SUPPLY FOR THE LONDON MARKET.

I HAVE sometimes envied the writers in your columns; some, because they seem to have such well-regulated minds that they are always cheerful; others, because they seem well informed, and have quotations always ready; and another class, because they seem masters of the subject they treat on. I have doubted whether anything is requisite to justify an appearance in print beyond the last qualification.

On reading your article in last week's Journal I felt that many would read and doubt, because the consumption of poultry is large in London, and it is always to be had. It must then be produced, and it is produced. Living in the midst of it, I can speak positively on the subject—I see the whole process daily. Sussex is our largest poultry-producing county, so far as fowls are concerned. It not only is an article causing large returns, but it is important in the accounts of the railways; yet if you were to ask me to take you to any place where the operation could be seen on a large scale I could not do it; nor could I take you to any place entirely devoted to poultry breeding. The trade is in the hands of higglers. They attend all the markets, and they have besides regular houses where they call, and where they take all the fowls. There are many of them, and there is great competition among them. Many of these men have work enough to employ constantly two, and sometimes three horses. They do not breed, but they buy fowls, sometimes fattened and fit to kill, at others lean. These latter are taken home and fattened. It is not an uncommon thing for one to have thirty or forty dozen at a time undergoing the process.

These would be the most numerous stock I could show in a small space. These higglers in order to keep up a regular supply of some dozens weekly, travel hundreds of miles, and go twenty, sometimes twenty-five, miles from home to secure three or four dozens of good fowls. They are mostly bought in small lots of from twelve to eighteen, and it is not an uncommon thing for the higgler at a known good house, when he is taking away birds ready for market, to buy all the chickens he sees running about at a certain age for a fixed price.

It is thus the large supply of the London markets is maintained throughout the year. Those who breed the fowls are certain of a market for them, and can nearly tell beforehand the price they will make.—SUSSEX.

POULTRY CLUB.

WILL you ask what the Poultry Club mean by the following passage in their circular?—"That the Club has for one of its main objects the discountenancing of the appointment of dealers as judges at any show." If Mr. Douglas is not a dealer, who is? Only last December he stated at Leeds,

communication with every part of the establishment is thus secured, and the whole forms a quadrangle.—G. K. GATELIN, *Civil Engineer, London.*

KELSO POULTRY AND BIRD EXHIBITION.

This was held in the Corn Exchange, Kelso, on Wednesday and Thursday, 1st and 2nd February, 1885. The following is a list of the awards:—

SPANISH.—First, R. Turnbull, Selkirk. Second, F. R. Pease, Darlington. *Chickens.*—First, W. Mcff, Aberdeen. Second, Miss B. Cuthbert, Causewayside, Edinburgh. Third, E. Brown, Sheffield. Highly Commended, J. Shorthose, Newcastle; I. G. Park, Whitehaven.

DORINGO (Coloured).—Cup and Third, Lord Binning, Mellerstain. Second, J. Gunson, Sandwith, Whitehaven. *Chickens.*—First, Lord Binning. Second, J. Steel, Kelso. Third, J. Bulman, Kelso. Highly Commended, A. Cameron, Mainhouse; Hon. Miss E. de Flahault, Tully-allan Castle.

BRAMA POOTRA (Any variety).—First, Mrs. Gordon, Castle Douglas. Second, J. Shorthose, Newcastle. Third, Miss H. Scott, Ancrum House. Highly Commended, Miss H. Scott. Commended, J. S. Keras, Mounteviot.

COCHIN-CHINA (Any variety).—First and Second, J. Shorthose, Newcastle. Third, G. Tawse, Tillybrae House, Helensburgh. Highly Commended, R. J. Charters, Kalemouth (Cochin-China). Commended, Mrs. Dickins, Cornhill House.

GAME (Any variety).—First, W. Boyls, Beverley. Second, J. Fletcher, Stonelough, Manchester (Black Red-). Third, Easton & Mabon, Jedburgh (Duckwing). *Chickens.*—First, J. Fletcher (Black Red-). Second, J. Perry, Netherby (Brown Red-). Third, W. Boyls. Highly Commended, D. Broomfield, Kelso (Black Red-). Commended, F. L. Roy, Nenthorn (Duckwing Game). *Single Cock.*—Cup, W. Boyls. Second, J. Fletcher (Black Red-). Third, Mrs. Turnbull, Jedburgh (Black). Highly Commended, W. Easton, Jedburgh (Black Red-).

HAMBURGERS (Gold-spangled).—First, A. Hatellie, Selkirk. Second, C. Anderson, Nenthorn. Third, R. Dickson, Selkirk. Highly Commended, R. Tate, Leeds.

HAMBURG (Silver-spangled).—First and Third, Mrs. Craw, Jedburgh. Second, F. L. Roy, Nenthorn. Highly Commended, J. U. Somner, Jedburgh. Commended, F. L. Roy.

HAMBURGERS (Gold or Silver-pencilled).—First, J. M'Innes, Paisley (Golden-pencilled). Second, Miss H. Scott, Ancrum House (Silver-pencilled). Third, W. Cheyne, Selkirk (Golden-pencilled). Highly Commended, J. M'Innes (Golden-pencilled).

BANTAMS (Game).—First, C. W. Brierley, Middleton. Second, D. Broomfield, Kelso (Duckwing). Third, T. Reid, Heaton (Brown Red). Highly Commended, W. Mabon, Jedburgh (Black Red and Game); F. L. Roy, Nenthorn (Black-breasted).

BANTAMS (Any other variety).—First, F. L. Roy, Nenthorn (Silver). Second, C. W. Brierley, Middleton. Third, T. C. Harrison, Hull. Highly Commended, A. Lindores, Kelso (Silver); F. L. Roy (Silver-laced); Lord Binning, Mellerstain House (Sebright).

DUCKS (White Aylesbury).—First, S. Swain, Bush, Jedburgh. Second, J. A. E. Fair, Gilliestongues. Third, J. Rutherford, Melrose. Highly Commended, R. J. Beuson, Darlington; J. James, Sambleton; Lord Binning, Mellerstain House.

DUCKS (Any other variety).—First, W. Hood, Edgerston Rig, Jedburgh (Rouen). Second, C. Hall, Bowmont Forest (Rouen). Third, Miss Lilly, Queenacairn (Rouen). Highly Commended, W. Edgar, Selkirk (Rouen); J. Patterson, Floors Castle (Rouen); J. B. Jessop, Beverley Road, Hull (East Indian).

TURKEYS.—First, F. R. Pease, Darlington. Second, T. L. Jackson, Bush of Ewes (Cambridge). Third, J. James, Sambleton.

GESE.—First, S. Swan, Jedburgh. Second, F. R. Pease, Darlington. Third, Lord Binning, Mellerstain House (Toulouse).

ANY OTHER VARIETY.—First, C. W. Brierley, Middleton (Poland). Second, J. A. E. Fair, Gilliestongues (White Dorking). Third, Hon. Miss E. de Flahault (Creve Coeur).

COTTAGERS' PRIZES.—First, A. Henderson, Jedburgh. Second, Mrs. Noble. Third, J. Cairns, Kelso.

SELLING CLASS.—First, T. L. Jackson. Second, J. A. E. Fair, Gilliestongues. Highly Commended, W. Easton, Jedburgh; R. Tate, Leeds; A. Waugh, Helton; J. Robertson, Jun., Kelso; Miss H. Scott; Miss Roy, Nenthorn; J. Rutherford, Melrose.

SWEETSTAKES (Dorking Cock).—First, J. Henry. Second, T. Y. Craig, Kirkcaldy. Highly Commended, F. Anderson, Nenthorn.

SWEETSTAKES (Bantam Cock).—First and Second, F. L. Roy. Highly Commended, M. Ballantine, Sprouton; J. Brooks, Kelso; A. Walker; I. G. Park.

PIGEONS.

CARRIERS.—First and Third, H. Yardley. Second, J. R. Robinson, Sunderland. Highly Commended, E. Thompson; J. R. Jessop, Hull.

TUMBLERS (Any variety).—First, H. Yardley. Second, J. R. Robinson, Sunderland. Third, W. Bryden, Cumberland. Highly Commended, P. A. Renwick; F. Key; J. Bell, Newcastle. Commended, R. Thompson.

FANTAILS.—First, W. B. Van Haansbergen, Newcastle. Second, W. R. Park. Third, J. R. Jessop, Hull. Highly Commended, J. R. Robinson, Sunderland; Lord Binning, Mellerstain House. Commended, H. Yardley.

JACOBIANS.—First, P. A. Renwick, Kelso. Second, G. Yule, Mellowlee. Third, W. Velton, Jun. Highly Commended, Mrs. Craw, Jedburgh.

BARNS.—First, H. Yardley, Birmingham. Second, W. B. Van Haansbergen. Third, J. R. Robinson. Highly Commended, H. Yardley; J. Gow, Kelso. Commended, J. Mollison.

TURKEYS.—First, J. R. Jessop, Hull. Second and Third, W. B. Van Haansbergen. Highly Commended, G. M. Byre, Northumberland; G. Yule; H. Yardley.

ANY OTHER VARIETY.—First, J. U. Somner, Jedburgh. Second, W. B. Van Haansbergen. Third, Mrs. Craw. Highly Commended, H. Yardley, Birmingham; Lord Binning.

PAIRS OF PIGEONS (Any variety).—First, P. A. Renwick, Kelso. Second, A. Ormiston. Highly Commended, R. Porteous, Kelso; J. Brooks, Kelso; P. A. Renwick. H. Patterson, Jun., Kelso. Commended, R. Porteous.

CANARIES.

DONS (Yellow).—Cock.—First, J. Mather, Kelso. Second, J. Harvey, Jedburgh. Very Highly Commended, G. Trotter, Kelso. Hen.—First, J. Kemp, Galashiels. Second, J. Harvey. Very Highly Commended, A. Ferguson, Kelso.

DONS (Buff).—Cock.—First, J. R. Thomson, Hawick. Second, J. Bannister, Galashiels. Very Highly Commended, A. Ferguson, Kelso. Hen.—First, J. R. Thomson. Second, J. Mather, Kelso. Very Highly Commended, A. Ferguson. Commended, W. Balmer, Galashiels.

BELOIANS (Yellow).—Cock.—First, J. Aitken, Kelso. Second, W. Dryden, Hawick. Highly Commended, W. Tait, Galashiels. Hen.—First, W. Dryden, Hawick. Second, J. Kemp, Galashiels. Highly Commended, J. Aitken, Kelso.

BELOIANS (Buff).—Cock.—First, W. Tait, Galashiels. Second, G. Laidlaw, Galashiels. Very Highly Commended, P. Jeffrey, Kelso. Hen.—First, J. Kemp, Galashiels. Second, J. Marshall, Galashiels. Highly Commended, J. Stocks, Kelso.

FLOCKED DONS (Yellow).—Cock.—First, A. Brown, Kelso. Second, A. Henderson, Kelso. Very Highly Commended, J. Mather, Kelso. Hen.—First, G. Laidlaw, Galashiels. Second, J. Mather, Kelso. Highly Commended, A. Ferguson, Kelso.

FLOCKED DONS (Buff).—Cock.—First, T. Stoddart, Kelso. Second, W. Broadfoot, Portobello. Highly Commended, J. Mather, Kelso. Commended, J. Kemp, Galashiels. Hen.—First, T. Stoddart, Selkirk. Second, J. Kemp, Galashiels. Highly Commended, Miss Clay, Kerchovert. Commended, A. Brown, Kelso.

FLOCKED BELOIANS (Yellow).—Cock.—First and Second, A. Rutherford, Kelso. Very Highly Commended, J. Gibson, Gordon. Hen.—First, J. Gibson. Second, S. Smith, Gordon. Commended, G. Bennet, Kelso.

FLOCKED BELOIANS (Buff).—Cock.—First, W. Dryden, Hawick. Second, J. Gibson, Gordon. Very Highly Commended, J. Croft, Galashiels. Highly Commended, T. Lindsay, Kelso. Hen.—First and Second, J. Gibson, Gordon. Highly Commended, W. Hardie, Kelso.

SWEETSTAKES.—First, J. Mather, Kelso. Second, J. Aitken, Kelso. Very Highly Commended, T. Stoddart, Selkirk.

BEST PAIR OF CANARIES.—First, A. Ferguson, Kelso (Don). Second, P. Jeffrey, Kelso (Belgian). Very Highly Commended, A. Ferguson (Don). Highly Commended, J. Mather, Kelso.

JUDGES.—*Poultry and Pigeons:* Edward Dixon, Esq., Gold Island; S. Brilby, Esq., Beverley, Yorkshire. *Canaries:* J. Forrest, Esq., Edinburgh.

LONGTOWN POULTRY EXHIBITION.

JANUARY 25th AND 26th.

DORKINGS.—First, — Hardie, Sorbie. Second, F. R. Pease, Darlington. Highly Commended, J. Jardine, Arklodon; J. Murray, Murray House. Commended, P. Scott, Netherby. *Chickens.*—First, Miss I. Hardie, Sorbie. Second, Miss Maxwell, Priors Linn. Highly Commended, Mrs. Graham, Braidlee. Commended, Miss L. Hope, Square.

SPANISH.—First, W. Holson, Milnholme. Second, T. Franklin, Burnfoot. Highly Commended, F. R. Pease, Darlington. *Chickens.*—First, Miss J. Hardie, Sorbie. Second, — Gunning, Burnfoot. Highly Commended, Mrs. Graham, Braidlee; T. Muirgrave, Longtown. Commended, G. Tait, Douglas.

HAMBURG (Golden-spangled).—First, R. Dickinson, Selkirk. Second, R. Burrow, Longtown. Highly Commended, R. Holliday, Wheelbarrow Hall. *Chickens.*—First, T. Muirgrave, Longtown. Second, R. Burrow. Highly Commended, Mrs. Ritchie, Selkirk; R. Dickinson, Selkirk. Commended, Miss M. Palmer, Dashwell Green.

HAMBURGERS (Golden-pencilled).—First and Second, F. R. Pease, Darlington. *Chickens.*—First, R. Burrow, Longtown. Second, F. R. Pease. Highly Commended, J. Towns, Longtown.

HAMBURGERS (Silver-spangled).—First, J. Hargreaves, Carlisle. Second, G. Tait, Douglas. Highly Commended, T. Franklin, Burnfoot. *Chickens.*—First, W. Cheyne, Selkirk. Second, J. Wilson, Crooked Holme. Commended, W. Benson, Longtown.

HAMBURGERS (Silver-pencilled).—First, T. Franklin, Burnfoot. Second, J. Smith, Canobie. *Chickens.*—First, J. J. Scott, Longtown. Second, Miss A. Little, Dickstree.

GAME.—First, John Brough, Carlisle. Second, James Brough, Carlisle. *Chickens.*—First, W. Gaddes, Harker. Second, W. B. Thomson, Parcelstown. (Disqualified, cockerels' legs painted in each of the three pens, D. Brown, Lyne-side; J. Porter, Holmfoot.)

ANY OTHER VARIETY.—First and Second, F. R. Pease, Darlington (Gold Poland, Black and White Crest). Commended, W. Beatty, Longtown; J. Carruthers, Hornick Hill.

GAME COCK.—First, John Brough, Carlisle. Second, James Brough, Carlisle.

BANTAMS (Game).—First, J. Wilson, Longtown. Second, T. Davidson, Longtown. Highly Commended, F. R. Pease.

ANY OTHER VARIETY.—First and Second, F. R. Pease, Darlington.

TURKEYS.—First, F. R. Pease, Darlington. Second, Miss I. Hardie, Sorbie. Highly Commended, Mrs. Weightman, Sandbed; Mrs. Graham, Braidlee.

GESE.—First, F. R. Pease, Darlington. Second, Mrs. McBurney, Field Mill. Highly Commended, D. Little, Bandalinton; Mrs. Bell, Hamagie; T. Watson, Newbiggin. Commended, W. Bell, Carwinley Mill.

DUCKS (Aylesbury).—First, Miss Bell, Hirst. Second, Miss Maxwell, Priors Linn.

DUCKS (Rouen).—First, Mrs. Graham, Braidlee. Second, Miss Moffat, Westknow. Highly Commended, Miss Palmer, Dashwell Green. Commended, F. R. Pease, Darlington.

DUCKS (Any other variety).—First, R. Jackson, Longtown (Wild). Second, R. Holliday, Wheelbarrow Hall.

PIGEONS.

CROPPERS.—First, W. Cheyne, Selkirk (White). Second, A. Thomson, Jun., Parcelstown (Red). Highly Commended, R. Irving, Langholm; Miss M. Malouin, Milnholm.

TUMBLERS (Almond).—First, A. Thomson, Jun., Parcelstown. Second, — Bryden, Netherby.

communication with every part of the establishment is thus secured, and the whole forms a quadrangle.—G. K. GYELIN, *Civil Engineer, London.*

KELSO POULTRY AND BIRD EXHIBITION.

This was held in the Corn Exchange, Kelso, on Wednesday and Thursday, 1st and 2nd February, 1865. The following is a list of the awards:—

SPANISH.—First, R. Turnbull, Selkirk. Second, F. R. Pease, Darlington. *Chickens.*—First, W. Mcff, Aberdeen. Second, Miss B. Cuthbert, Causewayside, Edinburgh. Third, E. Brown, Sheffield. Highly Commended, J. Shortness, Newcastle; I. G. Park, Whitehaven.

DORLING (Coloured).—Cup and Third, Lord Binning, Mellerstain. Second, J. Gunson, Sandwith, Whitehaven. *Chickens.*—First, Lord Binning. Second, J. Steel, Kelso. Third, J. Bulman, Kelso. Highly Commended, A. Cameron, Mainhouse; Hon. Miss E. de Flahault, Tully-allan Castle.

BRAMA POOTRA (Any variety).—First, Mrs. Gordon, Castle Douglas. Second, J. Shortness, Newcastle. Third, Miss H. Scott, Ancrum House. Highly Commended, Miss H. Scott. Commended, J. M. Kers, Mounteviot.

COCHIN-CHINA (Any variety).—First and Second, J. Shortness, Newcastle. Third, G. Tawse, Tillbrae House, Helensburgh. Highly Commended, R. J. Charters, Kalsmouth (Cochin-China). Commended, Mrs. Dickins, Cornhill House.

GAME (Any variety).—First, W. Boyls, Beverley. Second, J. Fletcher, Stoneclough, Manchester (Black Red). Third, Easton & Mabon, Jedburgh (Duckwing). *Chickens.*—First, J. Fletcher (Black Red). Second, J. Perry, Netherby (Brown Red). Third, W. Boyls. Highly Commended, D. Broomfield, Kelso (Black Red). Commended, F. L. Roy, Nenthorn (Duckwing Game). *Single Cock.*—Cup, W. Boyls. Second, J. Fletcher (Black Red). Third, Mrs. Turnbull, Jedburgh (Black). Highly Commended, W. Easton, Jedburgh (Black Red).

HAMBURG (Gold-spangled).—First, A. Hatell, Selkirk. Second, C. Anderson, Nenthorn. Third, R. Dickson, Selkirk. Highly Commended, R. Tate, Leeds.

HAMBURG (Silver-spangled).—First and Third, Mrs. Craw, Jedburgh. Second, F. L. Roy, Nenthorn. Highly Commended, J. U. Somner, Jedburgh. Commended, F. L. Roy.

HAMBURG (Gold or Silver-pencilled).—First, J. M'Innes, Paisley (Golden-pencilled). Second, Miss H. Scott, Ancrum House (Silver-pencilled). Third, W. Cheyne, Selkirk (Golden-pencilled). Highly Commended, J. M'Innes (Golden-pencilled).

BANTAMS (Game).—First, C. W. Brierley, Middleton. Second, D. Broomfield, Kelso (Duckwing). Third, T. Reid, Heaton (Brown Red). Highly Commended, W. Mabon, Jedburgh (Black Red and Game); F. L. Roy, Nenthorn (Black-breasted).

BANTAMS (Any other variety).—First, F. L. Roy, Nenthorn (Silver). Second, C. W. Brierley, Middleton. Third, T. C. Harrison, Hull. Highly Commended, A. Lindores, Kelso (Silver); F. L. Roy (Silver-laced); Lord Binning, Mellerstain House (Sobright).

DUCKS (White Aylesbury).—First, S. Swain, Bush, Jedburgh. Second, J. A. E. Fair, Gilliestongues. Third, J. Rutherford, Melrose. Highly Commended, R. J. Benson, Darlington; J. James, Samlestone; Lord Binning, Mellerstain House.

DUCKS (Any other variety).—First, W. Hood, Edgerston Rig, Jedburgh (Rouen). Second, C. Hall, Bowmont Forest (Rouen). Third, Miss Lilly, Queenscairn (Rouen). Highly Commended, W. Edgar, Selkirk (Rouen); J. Patterson, Floors Castle (Rouen); J. B. Jessop, Beverley Road, Hull (East Indian).

TURKEYS.—First, F. R. Pease, Darlington. Second, T. L. Jackson, Bush of Ewes (Cambridge). Third, J. James, Samlestone.

GESE.—First, S. Swan, Jedburgh. Second, F. R. Pease, Darlington. Third, Lord Binning, Mellerstain House (Toulouse).

ANY OTHER VARIETY.—First, C. W. Brierley, Middleton (Poland). Second, J. A. M. E. Fair, Gilliestongues (White Dorking). Third, Hon. Miss E. de Flahault (Creve Coeur).

COTTAGE PRIZES.—First, A. Henderson, Jedburgh. Second, Mrs. Noble. Third, J. Cairns, Kelso.

SHELLING CLASS.—First, T. L. Jackson. Second, J. A. S. E. Fair, Gilliestongues. Highly Commended, W. Easton, Jedburgh; R. Tate, Leeds; A. Waugh, Helton; J. Robertson, jun., Kelso; Miss H. Scott; Miss Roy, Nenthorn; J. Rutherford, Melrose.

SWEEPSTAKES (Dorking Cock).—First, J. Henry. Second, T. Y. Craig, Kirkcaldy. Highly Commended, F. Anderson, Nenthorn.

SWEEPSTAKES (Bantam Cock).—First and Second, F. L. Roy. Highly Commended, M. Ballantine, Sprouton; J. Brooks, Kelso; A. Walker; I. G. Park.

PIGEONS.

CARRIERS.—First and Third, H. Yardley. Second, J. R. Robinson, Sunderland. Highly Commended, E. Thompson; J. R. Jessop, Hull.

TUMBLERS (Any variety).—First, H. Yardley. Second, J. R. Robinson, Sunderland. Third, W. Brydens, Cumberland. Highly Commended, P. A. Renwick; F. Kay; J. Bell, Newcastle. Commended, R. Thompson.

FANTAILS.—First, W. B. Van Haansbergen, Newcastle. Second, W. R. Park. Third, J. R. Jessop, Hull. Highly Commended, J. R. Robinson, Sunderland; Lord Binning, Mellerstain House. Commended, H. Yardley.

JACOBS.—First, P. A. Renwick, Kelso. Second, G. Yule, Mellowes. Third, W. Vetch, jun. Highly Commended, Mrs. Craw, Jedburgh.

BARRE.—First, H. Yardley, Birmingham. Second, W. B. Van Haansbergen. Third, J. R. Robinson. Highly Commended, H. Yardley; J. Gow, Kelso. Commended, J. Molleson.

TURKEYS.—First, J. R. Jessop, Hull. Second and Third, W. B. Van Haansbergen. Highly Commended, G. M. Byers, Northumberland; G. Yule; H. Yardley.

ANY OTHER VARIETY.—First, J. U. Somner, Jedburgh. Second, W. B. Van Haansbergen. Third, Mrs. Craw. Highly Commended, H. Yardley, Birmingham; Lord Binning.

PAIR OF PIGEONS (Any variety).—First, P. A. Renwick, Kelso. Second, G. Ormiston. Highly Commended, R. Porteous, Kelso; J. Brooks, Kelso;

A. Renwick, J. Patterson, jun., Kelso. Commended, R. Porteous.

CANARIES.

DONS (Yellow).—Cock.—First, J. Mather, Kelso. Second, J. Harvey, Jedburgh. Very Highly Commended, G. Trotter, Kelso. *Hen.*—First, J. Kemp, Galashiels. Second, J. Harvey. Very Highly Commended, A. Ferguson, Kelso.

DONS (Buff).—Cock.—First, J. R. Thomson, Hawick. Second, J. Bannister, Galashiels. Very Highly Commended, A. Ferguson, Kelso. *Hen.*—First, J. R. Thomson. Second, J. Mather, Kelso. Very Highly Commended, A. Ferguson. Commended, W. Balmer, Galashiels.

BELGIANS (Yellow).—Cock.—First, J. Aitken, Kelso. Second, W. Dryden, Hawick. Highly Commended, W. Tait, Galashiels. *Hen.*—First, W. Dryden, Hawick. Second, J. Kemp, Galashiels. Highly Commended, J. Aitken, Kelso.

BELGIANS (Buff).—Cock.—First, W. Tait, Galashiels. Second, G. Laidlaw, Galashiels. Very Highly Commended, P. Jeffrey, Kelso. *Hen.*—First, J. Kemp, Galashiels. Second, J. Marshall, Galashiels. Highly Commended, J. Stocks, Kelso.

FLOCKED DONS (Yellow).—Cock.—First, A. Brown, Kelso. Second, A. Henderson, Kelso. Very Highly Commended, J. Mather, Kelso. *Hen.*—First, G. Laidlaw, Galashiels. Second, J. Mather, Kelso. Highly Commended, A. Ferguson, Kelso.

FLOCKED DONS (Buff).—Cock.—First, T. Stoddart, Kelso. Second, W. Broadfoot, Portobello. Highly Commended, J. Mather, Kelso. Commended, J. Kemp, Galashiels. *Hen.*—First, T. Stoddart, Selkirk. Second, J. Kemp, Galashiels. Highly Commended, Miss Clay, Kercho-tera. Commended, A. Brown, Kelso.

FLOCKED BELGIANS (Yellow).—Cock.—First and Second, A. Rutherford, Kelso. Very Highly Commended, J. Gibson, Gordon. *Hen.*—First, J. Gibson. Second, S. Smith, Gordon. Commended, G. Bennet, Kelso.

FLOCKED BELGIANS (Buff).—Cock.—First, W. Dryden, Hawick. Second, J. Gibson, Gordon. Very Highly Commended, J. Creelman, Galashiels. Highly Commended, T. Lindsay, Kelso. *Hen.*—First and Second, J. Gibson, Gordon. Highly Commended, W. Hardie, Kelso.

SWEEPSTAKES.—First, J. Mather, Kelso. Second, J. Aitken, Kelso. Very Highly Commended, T. Stoddart, Selkirk.

BEST PAIR OF CANARIES.—First, A. Ferguson, Kelso (Dons). Second, P. Jeffrey, Kelso (Belgian). Very Highly Commended, A. Ferguson (Dons). Highly Commended, J. Mather, Kelso.

JUDGES.—*Poultry and Pigeons:* Edward Dixon, Esq., Gold Island; S. Brilby, Esq., Beverley, Yorkshire. *Canaries:* J. Forrest, Esq., Edinburgh.

LONGTOWN POULTRY EXHIBITION.

JANUARY 25th AND 26th.

DORLING.—First, — Hardie, Sorbie. Second, F. R. Pease, Darlington. Highly Commended, J. Jardine, Arkleston; J. Murray, Murray House. Commended, P. Scott, Netherby. *Chickens.*—First, Miss I. Hardie, Sorbie. Second, Miss Maxwell, Priors Linn. Highly Commended, Mrs. Graham, Braidlee. Commended, Miss L. Hope, Square.

SPANISH.—First, W. Hoson, Milnholm. Second, T. Franklin, Burnfoot. Highly Commended, F. R. Pease, Darlington. *Chickens.*—First, Miss J. Hardie, Sorbie. Second, — Gunning, Burnfoot. Highly Commended, Mrs. Graham, Braidlee; T. Musgrave, Longtown. Commended, G. Tait, Douglas.

HAMBURG (Golden-spangled).—First, R. Dickinson, Selkirk. Second, R. Burrow, Longtown. Highly Commended, R. Holliday, Wheelbarrow Hall. *Chickens.*—First, T. Musgrave, Longtown. Second, R. Burrow. Highly Commended, Mrs. Ritchie, Selkirk; R. Dickinson, Selkirk. Commended, Miss M. Palmer, Dashwell Green.

HAMBURG (Golden-pencilled).—First and Second, F. R. Pease, Darlington. *Chickens.*—First, R. Burrow, Longtown. Second, F. R. Pease. Highly Commended, J. Towns, Longtown.

HAMBURG (Silver-spangled).—First, J. Hargreaves, Carlisle. Second, G. Tait, Douglas. Highly Commended, T. Franklin, Burnfoot. *Chickens.*—First, W. Cheyne, Selkirk. Second, J. Wilson, Crooked Holme. Commended, W. Benson, Longtown.

HAMBURG (Silver-pencilled).—First, T. Franklin, Burnfoot. Second, J. Smith, Canobie. *Chickens.*—First, J. J. Scott, Longtown. Second, Miss A. Little, Dicktrees.

GAME.—First, John Brough, Carlisle. Second, James Brough, Carlisle. *Chickens.*—First, W. Gaddes, Harker. Second, W. B. Thomson, Parcelstown. (Disqualified, cockerels' legs painted in each of the three pens, D. Brown, Lyne-side; J. Porter, Holmefoot.)

ANY OTHER VARIETY.—First and Second, F. R. Pease, Darlington (Gold Poland, Black and White Crests). Commended, W. Beary, Longtown; J. Carruthers, Hornick Hill.

GAME COOK.—First, John Brough, Carlisle. Second, James Brough, Carlisle.

BANTAMS (Game).—First, J. Wilson, Longtown. Second, T. Davidson, Longtown. Highly Commended, F. R. Pease.

ANY OTHER VARIETY.—First and Second, F. R. Pease, Darlington.

TURKEYS.—First, F. R. Pease, Darlington. Second, Miss J. Hardie, Sorbie. Highly Commended, Mrs. Weightman, Sandob; Mrs. Graham, Braidlee.

GESE.—First, F. R. Pease, Darlington. Second, Mrs. McBurney, Fidd Mill. Highly Commended, D. Little, Randalston; Mrs. Bell, Hargreaves; T. Watson, Newbiggin. Commended, W. Bell, Carwinley Mill.

DUCKS (Aylesbury).—First, Miss Bell, Hirst. Second, Miss Maxwell, Priors Linn.

DUCKS (Rouen).—First, Mrs. Graham, Braidlee. Second, Miss Moffat, Westknow. Highly Commended, Miss Palmer, Dashwell Green. Commended, F. R. Pease, Darlington.

DUCKS (Any other variety).—First, R. Jackson, Longtown (Wild). Second, R. Holliday, Wheelbarrow Hall.

PIGEONS.

CROPPERS.—First, W. Cheyne, Selkirk (White). Second, A. Thomson, jun., Parcelstown (Red). Highly Commended, B. Irving, Langholm; Miss M. Malcolm, Milnholm.

TUMBLERS (Almond).—First, A. Thompson, jun., Parcelstown. Second, — Bryden, Netherby.

TURKISHS (Any other variety).—First, A. Thompson, jun., Parcelstown. Second, — Bryden, Netherby (Black). Highly Commended, R. Irving, Langholm. Commended, — Bryden (Blue).
FANTAILS.—First, J. Campbell, Langholm. Second, A. Thomson, jun., Parcelstown. Commended, — Bryden, Netherby.
CANARIES.—First, A. Thompson, jun., Parcelstown. Second, J. Tweddle, Longtown.
JACOBS.—First, I. Cullen, Mount. Second, — Bryden, Netherby. Commended, R. Irving, Langholm.
ANY OTHER VARIETY.—First and Highly Commended, J. Campbell. Second, — Bryden, Netherby.

CANARIES.
BELGIAN (Yellow).—Cock.—First, P. Little. Second, J. McKie, Longtown. Hen.—First and Second, J. Beeby, Carlisle.
BELGIAN (Buff).—Cock.—First and Second, J. Beeby, Carlisle. Hen.—First, D. Marre, Longtown. Second, P. Little, Longtown.

SOORON (Yellow).—Cock.—First, W. Davidson, Longtown. Second, G. McKie, Longtown. Hen.—First, J. McKie, Longtown. Second, P. Little, Longtown.

SOORON (Buff).—Cock.—First, D. Marre, Longtown. Second, J. McKie, Longtown. Hen.—First, W. Davidson, Longtown. Second, P. Little, Longtown.

COMMON CANARY (Any colour).—Cock.—First, J. Beeby, Carlisle. Second, M. Little, Longtown. Hen.—Prize, J. Beeby, Carlisle.

MULE (Any colour).—First, R. Jackson, Longtown. Second, T. Doughall, Carlisle. Commended, R. Crosslands, Carlisle; F. Anderson, Kirkpatrick-Fleming.

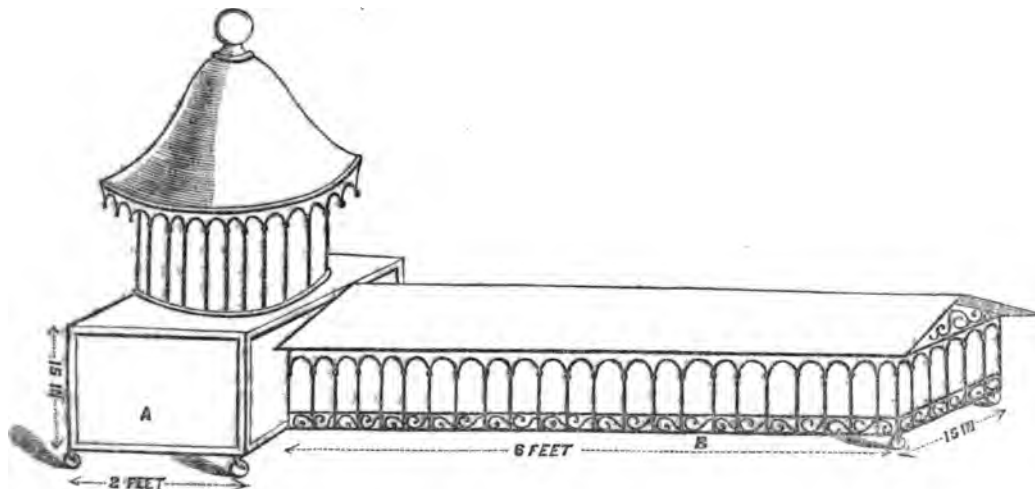
BEST BREDCOCK.—Prize, W. Davidson, Longtown. Highly Commended, J. Beeby, Carlisle.

JUDGES.—Poultry and Pigeons: R. Teebay, Esq., Preston. Pigeons and Canaries: John Armstrong, Esq., Carlisle.

ORNAMENTAL HEN COOP.

IN compliance with the desire of your correspondent, "F. P.," for a design of a hen coop, and your offer to publish it if found suitable, I enclose a sketch which I believe combines all the requisites of a perfect hen coop—viz.,

1st, Free admission of sun light and air; 2nd, Shade and non-exposure of chickens to change of weather; 3rd, Easy supervision of the chickens by the mother; 4th, Being easily moveable to fresh ground.



A is a wooden box without floor, on rollers, and say about 2 feet square, and 18 inches high, with a circular opening at top, on which a wire gauze, with the projecting zinc poles, are fixed, and which may be called the observatory

of the mother. B is a run formed of wire, the top covered with oil cloth or American cloth. This run can be detached in fine weather if desirable.

This subject alone would be sufficient for the foundation of a most interesting volume, but your Journal is too practical, and your space too valuable, to be so taken up: there-

fore, I will illustrate the necessity of a hen coop by one sentence—viz., "Maternal affection too often blinds discretion."—G. K. GYEELIN, C.E.

THE BRADFORD POULTRY EXHIBITION.

Most poultry amateurs felt a lively interest in the success of the Bradford Show, and the result was, not only a very large entry, but such general excellence throughout, as to form a theme for universal congratulation. In short, it was the uniform opinion of the three gentlemen who officiated as arbitrators, that taking a very close review of the whole, as classes, their experience did not call to mind a show which was open to so little exception. The prizes offered were liberal and numerous. Silver cups did, no doubt, not a little to secure this pleasing result; but another feature that as certainly tended as much as any to ensure public confidence, was the well-known fact, that a few of our largest poultry-breeders were "lashed to the helm," and under their care every confidence was entertained, not only of perfect justice being secured as to the awards, but also a feeling that the best and most judicious management might be depended upon, as to the welfare of the really first-rate specimens entrusted to the care of the Committee. Nor were the expectations of exhibitors disappointed, for the management of the Show was as faultless as possible, and our impression is, that many of the competing birds will actually return from Bradford in improved condition, rather than otherwise. Rough weather, accompanied by a fall of

snow, was the only drawback, and in all probability this did tend to lessen the number of visitors, but still the attendance was very much superior to the common run of such meetings. The Rifle Barracks in which the show took place, is a most suitable building for such a purpose, and affords an equalised light throughout, a feature so desirable at all such meetings.

The *Spanish* was a capital class, as evidenced by the fact that ten pens out of fourteen secured the favourable mention of the Judges. The *Dorkings* were equally good, but Lady Holmeadale's unapproachable collection was so triumphant as to leave only the less prizes to be competed for by her rivals. The *Game* classes were unusually strong, and the result was, the prizes were completely broadcast among some of the most noted Game fowl breeders; in fact, in these classes it was a very close run in almost all cases. The *Brahmas* were magnificent; and the *Cochin* classes were composed of most of the principal winners of the season. Capt. Heaton here still kept his mastery, though subjected to a number of very hard tests. *Hamburgs*, at Bradford, would be expected to be of first-rate character, the district being to a proverb, the locality of all others their own; they certainly well supported the prestige, for it re-

quired no small amount of forethought and experience to allot a silver cup in classes of all Hamburg breeds competing, and, consequently, to the best pen. The Golden-spangled were the recipients of this much-coveted honour. We do not recollect ever seeing a better show of *Polands*, and the *Game Bantams* were as worthy of especial remark. The "selling class" was a downright success, many capital pens being entered at exceedingly moderate prices, whilst buyers were almost struggling to secure the most favourable specimens. The entry for this one class only was fifty pens.

Rouen Ducks were good, and the remainder of the Duck tribe were huddled indiscriminately together, forming, however, a beautiful class. Mr. John Jennison, of Belle Vue Zoological Gardens, Manchester, exhibited some exquisite specimens of Carolina Ducks, and the common Teal; Aylesbury Ducks, Buenos Ayrean, and a multitude of "cross-breeds," making a praiseworthy competition. Next year, we are told many of the classes of the Bradford Show will be sub-divided, and this meeting's present success justifies so doing.

The *Pigeons* were excellent, and attracted a very large amount of public favour, whilst a Dog Show attached to the Exhibition was filled to overflowing. Though late in beginning we do not hesitate to say, the Bradford Committee have now secured a standing for their local show unprecedented as a first success, and it must in such hands continue to increase in its prosperity.

We published the names of the Judges, and the list of prize-takers last week.

A NEW CHAPTER IN THE NATURAL HISTORY OF THE BEE.

BEE COMMOTIONS AND QUEEN ENCASEMENTS.

(Concluded from page 104.)

THIRD question. Let us now consider the effects of introducing a queen into a queenless hive. Under this head I need scarcely bring forward cases in illustration. The fact is, there is no uniform rule that I know of, and the practical apiarian will find not a little dissimilarity of conduct on the part of the bees in such a case. We know it was Huber's opinion, that "if before substituting the stranger queen twenty-four hours elapse, she will be well received, and reign from the moment of her introduction into the hive." Greatly as I admire that distinguished and pre-eminent apiarian for his unrivalled knowledge of the bee, and for the general accuracy of his observations and experiments, I confess I have not found my experience on this point to coincide invariably with his; indeed, I am constrained in some important particulars to differ from his views as expressed in his letters, "On the combats of queens," and "Reception of a stranger queen." The German naturalists, Schirach and Riem, held diametrically opposite views from Huber on this subject. They thought it was the office of the common bees to settle the question as to the choice of queens, and to kill supernumerary ones; while we know that Huber maintained that not only virgin queens engaged in single combat, but that fertile queens also when placed together in one hive decided the question of ascendancy as between themselves after the same fashion—in short, "that the bees in no case ever sting a queen." We also know that the celebrated French naturalist, M. de Reaumur did not agree with Huber on some of these points, more especially in regard to the reception of a stranger queen meets with, when introduced into a hive having a queen. M. de Reaumur affirmed that bees "having a queen they are satisfied with, are, nevertheless, disposed to give the 'best possible rejection to any female seeking refuge among them.'" In combating an experiment of M. de Reaumur, in which he had been successful in presenting a stranger queen to some four or five hundred bees which he had expelled from their native hive, Huber remarks—"To render such an experiment conclusive, it must be made in a populous hive; and on removing the native queen the stranger must be immediately substituted in her place. Had this been done, I am quite persuaded that M. de Reaumur would have seen the bees imprison the usurper, confine her at least twelve or fifteen days among them, and frequently assault her. No ag-

riation has occurred in my experiments regarding this fact." Here, then, we have very conflicting opinions entertained on this subject by these eminent men. Of course, great naturalists must be allowed to differ in opinion on some points, as great doctors do, but here the discrepancies are too wide, I think, to be the result of careful study and observation.

It is not my intention here to discuss this question at large, though my own views are decided enough. We must always bear in mind, that in operating upon bees, we frequently place them in an unnatural position, a position which, more or less, affects their instinct and dispositions, so that we cannot always calculate with certainty what the results in any particular case may be. Huber himself has admitted, that on one occasion a queen was stung in removing her from the centre of a cluster, but he thought it arose from pure accident and irritation caused by himself, and "that had he not interfered they would have been content with confining the queen, and she would not have perished."

My own opinion is, that in the great majority of cases in which the queen falls a victim to imprisonment, she is not stung, but succumbs through lengthened captivity, to inanition, privation of air, and ill usage. The truth is, a queen cannot be stung when densely surrounded by bees: hence I see in the very encasement itself, a wise provision of nature to prevent such a result. It is in this way often converted from a proceeding, which at the first seems threatening and hostile, into one which ultimately becomes her very safety. For it is certain that in cases where the bees are so inclined, the queen emerges from a somewhat protracted confinement without the smallest injury; but if otherwise inclined the captivity is one of unsparing death. Hence when a queen is on any occasion encased, and it is desirable to release her, the utmost caution must be observed in doing so, for it may happen that just as you are in the act of divesting her of the last bee that encircles her, that remaining little vixen may in an instant, when all hindrances are removed, curve its body, and inflict a mortal wound. Caution and dexterity, therefore, are equally necessary in preventing such a contingency.

Bees are admitted by all to be creatures easily irritated, and highly pugnacious; but most apiarians, I think, err in viewing the queen as a mere passive instrument, having no likings or dislikings in whatever position you may be pleased to place her. Her dispositions, are, in fact, entirely ignored. This is a popular error, I think. Who can tell but the conduct of the bee may very often be guided by the dispositions of the queen? So that when a queen is introduced on any occasion to strange bees, her own want of submission may tend to a mode of dealing which might not otherwise be necessary. The lower animals are very quick in discovering in others of their species the different dispositions which affect their conduct towards each other, and when strangers meet amity or hostility may be the result, according as these dispositions betray themselves. Hence, therefore, at different times, I may introduce a queen to the same hive with different results. I was much amused during the past summer at the pluck and pugnacity of a young queen just begun to be fertile. She was removed from a unicomb-hive for the purpose of being presented to a hive which had failed to rear a queen for themselves. After being confined in a little wire cage she was taken out and a single worker bee of the hive in question was presented to her. The bee examined the queen all round with its antennae, too curiously it may be, for pugnacious dispositions were evidently aroused in the royal breast, she being the first to attack, and a conflict resulted in which the queen, however, only came off second best. They were separated before any injury was inflicted on either side.

I said I differed from Huber in regard to results following the presentation of a stranger queen to a hive deprived of its own queen. True, it is safer in presenting a queen in such a case to allow twenty-four or thirty-four hours to elapse before doing so, and for this very obvious reason, that the bees will by that time have given over all hopes of finding their own sovereign; but the rule does not hold good invariably. I have found a queenless hive sometimes reject and kill a queen offered to it in such circumstances, even weeks after the loss; and, on the other hand, I have presented a queen successfully to a hive immediately after

depriving it of its own, and this, too, strange to say, without even an encasement. I shall narrate a case in point.

I deprived an observatory-hive of its queen to substitute a more youthful and prolific one. The substitution of the one was simultaneous with the deprivation of the other. I watched through the glass as a stranger queen ascended the comb, to see what was to be nature of her reception. She extended her proboscis to the first bee that encountered her, and was liberally fed by it. Her reception by others as they gathered around, though somewhat equivocal at first, was, on the whole, deferential and kind. Being struck with this indifference on the part of the bees, as to a change of queen, I thought of introducing a second queen, in order to test still further that indifference. This I did in about half an hour after, but this queen was immediately attacked in the usual way, and speedily surrounded by a dense cluster of ferocious enemies. I noticed a little commotion occurring in consequence of this encasement, and the first queen introduced also got a little excited, so that her timidity in traversing the comb caused some of the bees in her path to attempt to stop her progress. Seeing this I withdrew the encased queen, and the whole hive immediately became quiescent. I should mention that both these queens were reserve queens kept over with some few bees for experimental purposes. This case is, no doubt, an exceptional one; but it is on that very account I mention it. When in ordinary cases I have introduced a queen in such circumstances, a speedy encasement was the sure consequence. This does not always result, however, in the destruction of the queen. I have frequently succeeded in such cases without the aid, even, of any of those appliances generally resorted to. I shall give one instance in point out of many.

In the month of May last, the surviving Ligurian queen of two* I had received from Mr. Woodbury (neither, I am sorry to say, prospered), was at the head of a thinly-populated hive. I took away this queen with the view of presenting her to one of the most thriving and populous stocks in my apiary. I first expelled the whole bees from this hive and deprived it of its black queen. After this I beat out the whole swarm upon a sheet, and allowed the bees to enter first an empty skep, and afterwards their own hive again, which they did with a joyful hum. At this moment when all was jubilee, I placed the Ligurian queen in the midst, and she entered in the throng unmolested. When all was housed and had settled down, however, the stranger queen did not escape observation. She was encased, but her captivity was neither severe nor protracted. She was very soon afterwards restored to liberty and honour. On a former occasion, and for a like object, I caused this same queen to pass through a similar ordeal, but allowed her workers to accompany her. All these were killed, and she alone escaped after a protracted encasement.

Of course, I have frequently introduced stranger queens to queenless hives without any opposition on the part of the bees, but I wish to show that bees are sometimes so capricious in all matters of this kind, that what suits to-day may not answer to-morrow.

I may here say that I have great faith in Wildman's method of dealing with bees—namely, by operating on their fears. I have in this way converted the most infuriated hive I ever witnessed, by a few manipulations, into the most submissive and docile, metamorphosed the most irascible soldiery, with every dagger ready to be unsheathed, into the most peaceful of subjects, which I could cause to march or counter-march without one rebellious murmur, and among whose moving masses I could thrust my uncovered hand without sustaining the smallest injury.

I do not know what amount of knowledge is possessed by German apiarians regarding the curious and interesting phenomena I have been in these columns discussing, and endeavouring to solve; but I see it is stated to be Dzierzon's opinion that "the queen bee cannot pass beyond the limits of the 'brood nest,' except at the risk of her life." This is a most extraordinary opinion to emanate from such a high authority in apiarian science as the distinguished Silesian

bee-master. I am certainly at a loss to account for it. It seems to me to be on a par with the opinion ascribed to Schirach in regard to foul brood, that an abnormal deposition of the eggs by the queen might originate it. In other words, that the reversed position of the eggs in the cells might give rise to a reversed position of the pupæ, "so that the young bees, unable to extricate themselves from their prison, die and putrefy." Every apiarian who studies the internal economy of the bee by the aid of his unicombe can disprove both these mistaken theories. Fancy may suggest one thing or another—an abnormal arrangement of eggs in the ovaries, or an erroneous oviposition; but it is quite clear that in whatever way the egg may be placed in the bottom of the cell originally, on its head or the reverse, granted only that it hatches and becomes a larva, and that that larva is found to assume an annular or curved position in the cell and retains that normal position till sealed—what influence, let me ask, could the original position of the egg in the cell have in such circumstances on the subsequent position of the pupa? Then, again, as to Dzierzon's theory of the queen being in danger when out of the "brood nest," how often may the queen be seen in the unicombe hive, as I have often watched her through the glass, in the remotest corner of it, away from the so-called "brood nest," as if on purpose to enjoy undisturbed, and with greater freedom, those intervals of repose which from time to time intervene, and which nature seems to require in the arduous work of oviposition? Often in such circumstances when the queen was enjoying her *otium cum dignitate* have I roused her from her royal slumbers by a tap on the glass to a resumption of her maternal duties.

But I must conclude. I know I have not exhausted this interesting subject, nor alluded to all its varied phases and aspects. I have, however, out of a great mass of materials, selected what I conceived to be most to the point. The question is, as I have already stated, intensely interesting. I have prosecuted it with great keenness. I do not profess to be confident in all the conclusions come to with respect to these curious phenomena in all their different aspects; but I have stated my views such as they are, and shall be ready to alter or abandon them when additional light shall make it manifest I have erred. It may be difficult, perhaps impossible, for us to get at the motives of the bees in every case when surrounding their sovereign. Perhaps this, like some other subjects of physical inquiry, will afford materials for new observations which will never be completely exhausted. But be this as it may, I agree with the following remark made by Professor Owen in his treatise on a more mysterious subject still—namely, parthenogenesis:—"The true and rational explanation of natural phenomena is usually the result of the exercise of common sense and careful observation."

One remark, in connection with this subject, I must be allowed to make before closing. We must not, I think, look to the conduct of the bee as being in all cases of this kind guided by unerring wisdom, more especially in circumstances where external influences of an artificial character are brought to bear upon it. The intuitive principle of instinct is no doubt sufficient to direct it in all ordinary emergencies; but when we see it in some abnormal instances or conditions depart from what we know to be for its true good, it is unfair in us to measure its doings by a higher principle of action which it does not possess. Reason, it must be remembered, is above instinct, and we are not to expect that the bee will, in all possible cases in which it may be placed, act up to the mark by which we would gauge its wisdom. The bee is confessedly a very irascible creature when provoked, and in such circumstances I have often witnessed it do many things exceedingly foolish, just as its master may, in similar circumstances, be seen doing things exceedingly foolish; but aside from provocation and artificial appliances, the instinctive wisdom of the bee as displayed in all its varied aspects is such as to draw forth our wonder and excite our praise, and thus to lead our minds to the contemplation of that Great and Wise Being who hath implanted in this tiny creature such wonderful instincts and dispositions. I say this in exculpation of the conduct of our little favourites where, in some such instances as those occupying our attention in these pages, they have, in my opinion, been visited with unmerited

* Both these queens were, I understand, artificially reared in 1862. One of them bred a few small drones in March, 1863, but no drones at all in summer. In the following spring of 1864 she became a confirmed drone-breeder, and perished. The other produced no drones in 1863, very few in 1864, and died in January, 1865, a few days after the above was written.

censure, as if their instinct was radically at fault. I have always thought, and still believe, that when Nature is left to her own free and unfettered course—undisturbed and unmolested—instinct in the bee is a rudder which will be found almost invariably to guide it in a true and unerring course.—J. LOWE.

BEES DEAD IN THE CELLS.

WHILST unable to look after my bees myself, a hive which required feeding was neglected, and I found all the bees dead. I wish to keep all the combs which are in a frame-hive, ready for a swarm in the spring, but I find several dozen bees have thrust themselves so far into the cells that it is impossible to remove them without crushing them. Would it be safe to leave them for the swarm to remove, or would it produce disease amongst the new occupants of the hive? and would not the labour of removing the bees be quite as much as building new combs?—A LADY BEE-KEEPER.

[We always extract the bees one by one with a pair of tweezers, such as are used by watchmakers, and although this is often a long and troublesome operation, we do not grudge our labour. We doubt if the dead bodies would produce disease, but the bees would be compelled to gnaw off the cells on either side of the comb and construct new ones.]

SUPERIORITY OF LIGURIAN BEES.

WILL you inform me in what the Ligurian bees are superior to the common bees, excepting being such great breeders? Are they generally preferred by those who have fairly tried both? I have ten stocks of the black bees, five of them are in the Woodbury bar and frame hives. One was an artificial swarm of May 7th, 1864, and gave me a super of 31 lbs. of pure honey on the 31st of July.—A BROADCLISTER.

[Much greater beauty must also be conceded as an additional point in which the Ligurian is superior to the common bee. It must, however, be remembered that superior breeding powers argue greater powers of collecting honey, and really include every other good quality that can be named. We never knew any one who had once fairly established Ligurians in his apiary willingly return to the common honey bee.]

TORTOISES.

WE have in the garden here two land Tortoises—the one a very old one weighing 7 lbs. 6 ozs., the other a very small one, which I received from a friend as a present about three months since.

They were both put in the same greenhouse and seemed to be doing quite well until about a fortnight ago, when from some cause or other the smaller one died. I should be obliged if you or any of your correspondents could inform me what was the cause of its death, as it received the same care as the older one has for the last thirty years; also, as I should like to polish the shell, how I am to get the body out of the shell to do so?

I should have stated the weight of it when living was 6 ozs.—J. PROSSER, Longford.

AVOIDING RANCID BUTTER.

ONE of your correspondents inquires about good butter-making. I have suffered from bad butter for three years, every autumn, and having four fine healthy young cows and a cleanly dairy-maid I thought it ought not to continue to be the case. My butter is now always good, and I have it up sixty miles from the country twice a-week. When the fresh 4 lb. arrives if there is any left of the 6 lb. which arrived at the beginning of the week, one is as good as the other. The whole secret is this: Have two cream-pots, and let the dairy-woman stir her cream round the first thing when she enters her dairy, and empty the cream into the clean pot which was emptied and washed the morning before. This must be

done regularly every morning, and good butter will be the result, provided, always provided, the dairy-maid is clean with the dairy things. Mine are all scalded directly they have been used, pans, pails, prints, churn, &c., and placed in the open air, and rinsed with cold water before they are again used.

I may mention that glass is the best material for a cream-pot. A lump of salt should be kept in the cream-pot.—F. C.

RANCIDITY in butter is caused, in my opinion, by dead leaves eaten by the cows amongst the grass.—A FARMER'S WIFE.

[A gentleman informs us that he knows an instance where good butter never is obtained in autumn, and this is attributed to the cows eating the fallen leaves of oak and ash trees which fall on to the pastures from the trees around them.—Eds.]

OUR LETTER BOX.

KENDAL AND JEDBURGH SHOWS.—A first-class pen of Golden-spangled Hamburgs exhibited at the above Shows has been exchanged in mistake or stolen. They were sent direct (or ought to have been) from Kendal to Jedburgh by the secretaries of the former Show, and a most wretched pair of mongrel-bred Hamburgs were returned from Jedburgh in lieu of the above, in a different hamper, but the proper direction label. Any exhibitor having received them in mistake will much oblige by writing at once to the secretaries, or the exhibitor, Mr. W. Cooper, Helmsley, York.

BRAHMA POOTRAS (*H. Leeworthy*).—We were obliged by your communications, and, although you think they prove Brahma Pootras a pure breed, we think they support our opinion that they are a variety of the Coochin-China. You think the pea comb and more sunken eye are sufficient to prove a pure breed. We think they are no such proof, otherwise the Rose-combed Dorking might be considered a breed different from the single-combed. However, we have in recent Numbers fully stated why we think the Brahma Pootras a variety of the Coochin-China, and we refer you to those Numbers. Our opinion is confirmed, not changed, by the arguments and evidence elicited.

POULTRY CLUB (*A Looker-on*).—General innuendoes and sarcasms are not fair. If you have any specific charges, and furnish us (not for publication) with your name, we shall not hesitate at finding space for you. That the Club is a failure, and that a president and secretary resident in Ireland may not tend to renovate it, is probably true, but before we can allow it to be attacked in our pages we must be made aware of specific delinquencies.

KEPPING BANTAMS AND MALAYS ON THE SAME RUN (*A Broadclister*).—You may run them together with impunity. Malays are not much in demand, but there is sale for good ones.

HENS LAYING SOFT EGGS (*G. T. B.*).—As some of your fowls lay hard, and some soft-shelled eggs, it is a proof the run provides all that is necessary. The Silver-spangled Hamburgs are probably weakly-constituted birds. Give them castor oil, and put some preparation of iron in their water.

FOWLS FOR TABLE AND EGG-PRODUCING (*Delta*).—Spanish will do far better in confinement than Dorkings. Good ground oats are better food than thirds. Potatoes are not egg producers. The mixture is not a bad one; the fat is a good help. The grain enclosed is food for young chickens, but hardly good enough for adults. It is amusement for them to find it when it is scattered about. The cross between Dorking and Coochin makes a very useful fowl. If the produce are put together they do well; but the second use of either of the parents makes the breed incline so much that way as often to defeat the object sought. The cross between Spanish and Dorking is a bad one.

COTTAGERS' REMUNERATION FOR CHICKEN-REARING (*Subscriber*).—Your pay (1s. for each chicken reared) is not good enough. Each old fowl would consume 8s. per year for food. A very common arrangement is to give 3d. per week for every chicken reared, if they are taken away at a certain age, or at the will of the owner. It must be borne in mind they are very troublesome and more expensive the first few weeks of their lives than they are afterwards. The cottager should have 2s. for the keep of the fowls (one cock and four hens—Dorkings); and if the chickens were not kept after eight weeks, and were forty in number, 1s. 6d. each for the chickens.

LARGE SUPPLY OF EGGS.—F. W. Schroder, Esq., Frogmore House, Rickmansworth, wishes that "F. C.," to whom we replied in our Journal of the 21st ult., would communicate with him.

HIMALAYAN RABBITS (*A. R. M.*).—If you send us a letter in a stamped envelope, we will direct it, and forward it to "Himalaya."

ALANTHUS SILK WORM EGGS (*F. C.*).—If you write to Lady Dorothy Nevill, Dangstein, Petersfield, Hants, you will be furnished with a supply on reasonable terms.

LONDON MARKETS.—FEBRUARY 6.

POULTRY.

We have a good supply and a dull trade. We may now look daily for an improvement, as the House meets and London fills.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	3	0	3	6	Grouse	2	0	2	0
Smaller do.	2	0	2	6	Partridges	2	0	2	0
Chickens	1	6	1	9	Hares	2	0	2	0
Geese	6	0	6	6	Rabbits	1	4	1	5
Pheasants	3	0	3	2	Wild do.	6	0	6	0
Guinea Fowls	3	0	3	6	Pigeons	6	0	6	0

WEEKLY CALENDAR.

Day of Month	Day of Week	FEBRUARY 14—20, 1865.	Average Temperature near London.			Rain in last 38 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
14	Tu	Elder foliates.	45.4	31.1	38.3	14	18 47	11 45	37 9	16 8	18	14 26	45
15	W	Partridge pairs.	46.7	31.1	38.9	13	16 7	13 5	40 10	38 8	19	14 23	46
16	Th	Henbit Dead Nettle flowers.	46.6	30.6	38.6	8	14 7	15 5	43 11	2 9	20	14 20	47
17	F	Coltsfoot flowers.	46.7	31.1	38.9	14	12 7	17 5	morn.	31 9	21	14 15	48
18	S	Crocus flowers.	45.2	31.1	38.1	16	10 7	18 5	46 0	3 10	22	14 10	49
19	SUN	SEXAGESIMA SUNDAY.	45.1	31.3	38.2	14	8 7	20 5	48 1	43 10	23	14 4	50
20	M	Cotton Grass flowers.	45.6	30.7	38.1	20	6 7	22 5	46 2	32 11	24	13 58	51

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 45.9°, and its night temperature 31.0°. The greatest heat was 59° on the 16th, 1863; and the lowest cold, 2°, on the 17th, 1855. The greatest fall of rain was 0.51 inch.

THE AÉRATION OF VINE-BORDERS.



DO not know whether the aération of Vine-borders has received that attention from Vine growers which its importance deserves. I fear it has not. I sometimes think that this question has not that prominence assigned to it which its merits demand, in the pages of THE JOURNAL OF HORTICULTURE, and similar periodicals. As an

element of success in Vine culture, I believe it to be of great importance, and in practice, wherever I have seen it judiciously carried out, other conditions being favourable, the results have always been highly satisfactory.

In the formation of Vine-borders, we should not forget that the Vine is an exotic, requiring to grow it successfully a much warmer climate than we have. To compensate for inferiority of climate, it is not enough that we plant it under glass, surround it with any amount of warmth, and treat it otherwise on the most approved principles. So long as we neglect to use means to raise the temperature of the soil around the roots, and place them in an equally favourable medium with the leaves and branches, so long will our success be limited, crippled, and unsatisfactory, the power of the Vine to mature a large crop of fruit greatly impeded, and the quality of that which it does produce inferior. This is, perhaps, more apparent in the northern than the southern portions of these islands.

By raising the temperature of the soil around the roots to suit the various periods of growth, the root-action is largely increased, the roots being able and ready to appropriate that food which is within their reach, and necessary for the healthful and vigorous development of the wood, leaves, and fruit.

In an aèrated border comparatively few of the spongioles die during the winter; at all seasons they are to be seen a few inches below the surface in large numbers, ever ready to perform their proper functions when called upon to do so. In a cold, wet border, the reverse is the case, the roots being out of reach when wanted in the spring. The consequence is well known to most who have had to do with Vine culture.

Many of our best gardeners have in one way or other aèrated their Vine-borders. The reason this has not become general, may be the very considerable expense incurred when chambered borders are formed. For successful aération this is not necessary; the same end can be better attained by adopting other, more simple, and less expensive plans, and one that has been adopted here, and been in operation for a number of years, I purpose shortly to detail. One of the advantages of this plan will be apparent to most people at a glance—viz., the greatly

increased surface presented to the air, in passing below the border from the exterior to the interior of the house, and, consequently, the greater amount of heat absorbed—the principal, although not the only object to be gained by aération, or subterranean ventilation. The atmospheric air is every fine day during the growing season from 10° to 25° warmer than the soil of an ordinary Vine-border not artificially heated. By taking advantage of this, and conducting it beneath the Vine-border, by a few openings outside and inside the house, causing it to pass amongst the drainage, which is used in almost every Vine-border in considerable quantity, a rude system of aération might be secured, and found to work pretty well, particularly when 10 or 12 inches of stones or similar material have been used.

When new borders are to be made, it is generally necessary to concrete them, to prevent the roots from finding their way into the subsoil, which they will do, however well the borders may have been prepared, unless in some way prevented, and nothing is cheaper or more certain than concrete composed of lime and gravel. The borders of all the forcing-houses here have been concreted to the average thickness of 2½ inches, the surface of the concrete being 3 feet below the surface of the border when finished. The object which I have at present in view, will be best served by confining my description to one house.

The inside border is 30 feet by 16 feet. The external border is about 20 feet in breadth. At the outside of the border, and parallel with the house, a retaining wall is built with bricks on bed, strengthened by pillars every 5 feet, the whole rising to near the surface, the pillars having been built with openings in the centre 4½ inches square, and through these openings communicating with an air-drain below, running the whole length of the house, at the base of the wall, and acting both as an air and water drain. This drain is about 6 inches in width, and 10 inches in depth, being pigeon-holed on the side next the house. Four-inch drain tiles are laid across the border, 2 or 3 inches being left open at the joints, in parallel rows 10 or 12 inches asunder, and connected with the air-drain by the pigeon-holes, and with the interior of the house by pipes rising above the surface, beneath the hot-water pipes, passage, &c. The rows of tile-pipes lying on the concrete are overlaid with old slates, flat stones, &c., so as to leave as much open space as possible betwixt the rows, to be occupied with air currents. Above this covering a few inches of stones have been laid, finishing with very small ones, and about 2 feet of soil above.

After the month of March commences, advantage is taken of every warm hour, to admit atmospheric air below the border (the proper time to do so is ascertained by thermometers). This is done by opening the lids which cover the eyes in the pillars, keeping the front lights of the house shut, and opening the back ventilators, which at once sets a current in motion. As the season advances, and the weather becomes warmer, the aération continues the greater part of the day, and in the

warmest months both day and night. Tiles and stones being good conductors of heat, they extract it rapidly from the slow-air currents, and gradually pass it to the soil above, thus improving the root climate of the Vines. And now for the result, which will be best seen by referring to the success of a few of the finer varieties of Grapes, but which are also more difficult to grow well.

The Muscat Hamburgh, which is generally admitted to be one of the very finest Grapes in cultivation, is also, according to general report, considered to be one of the most difficult to manage. On its own roots here, in an aerated border, it grows and fruits as freely as the Black Hamburgh, and why should it not, seeing that in some parts of America it grows so well? A friend writes me from near Baltimore, that "the Muscat Hamburgh is a great favourite here, growing freely, and fruiting abundantly." Doubtless, the higher root temperature has to do with this. The Golden Hamburgh, another Grape difficult to manage, also does well on aerated borders, but requires to be some years established before it swells its berries thoroughly. The Black Morocco thus grown, and allowed to hang till the fruit begins to shrivel, is not only a very showy, but a very delicious Grape, having a fine Damson flavour, very different from what it is as generally grown, being then considered a rather coarse Grape.

I shall only notice another variety, which is not generally well grown, but which luxuriates on an aerated border—viz., the Black Barbarossa. I cut it here in December, 1863, 8 lbs. 1 oz. in weight; bunch, berry, and bloom, all that could be desired, as symmetrical as the finest Hamburgh, and when fully ripe not far behind it in flavour. When thus grown we never miss a full crop, the principal drawback is, that it requires from eight to ten months to mature its crop.

Other varieties succeed equally well. I only bring forward these important witnesses to assist in proving that much is to be gained by aerating our Vine-borders.—ARCHIBALD FOWLER, *Castle Kennedy, Stranraer.*

THE EXHIBITORS' LETTER TO THE COUNCIL OF THE ROYAL HORTICULTURAL SOCIETY.

It is with the deepest regret that I have read in the last Number of THE JOURNAL OF HORTICULTURE a letter from the exhibitors addressed to the Council of the Royal Horticultural Society. I say it is with regret, because I am certain the cause of horticulture must suffer from such a course of proceeding. I will place myself in the position of a disinterested looker-on, and, if you will allow me a corner in your valuable journal, attempt to reconcile, or, at any rate, diminish the objections offered.

The Council have evidently proposed a new, and, as it appears, objectionable scheme for the exhibition of plants for 1865. May they not have had some reason for making this great change? Now, it cannot be denied that, excepting for the pleasure of meeting so many friends and the general interest excited by so large a concourse of people, especially of the *élite* of the land, it has been a very general observation of late years, "How stale this thing is! We come to see the same plants exhibited by the same growers not only year after year, but at every and each exhibition of the season." It is well known in the horticultural world who will carry off the principal prizes. Mr. A may do so at one meeting, Mr. B at another; and why? It is often the circumstance of the condition of the plants, which even the difference of twenty-four hours may decide. It may be asked, Is there no merit in the cultivation of these perpetually successful specimens? Great merit is indeed due: great expense is incurred, and infinite labour and skill is required to produce these magnificent specimens of art. But after all what has this to do with horticulture? I am ready to admit that such well-grown specimens tend to the grandeur and effect of our exhibitions; but we must not forget that a repetition of the same things, whether of plants or any other objects of admiration, may at last lose their attraction. And here I think something may be said for the new scheme. Desirous of breaking through monopoly and monotony the Council seem to have determined on holding more numerous and specific meetings for certain

classes of plants, forgetting, no doubt, the necessary expense which attends these frequent exhibitions. The simple motive seems to have been to give a new feature to our old worn-out exhibitions, by no means adverse to the success of horticulture.

I now come to the day on which the exhibitions are to be held. The great objection has been made to Saturdays. I admit, for very many reasons it would not have been the day that I should have proposed; but it has been thought proper to try that day. The old Chiswick meetings were held on Saturdays. The Crystal Palace meetings have never, that I have heard of, been objected to by the complaining exhibitors. But this is not the question. What I would plainly ask is this—Has the Council of the Royal Horticultural Society, or the Council of any scientific body, the right to propose any scheme which they may think conducive to the advantage of that Society? I suppose no one will deny the power and right. Why, then, should the Exhibitors' Society take upon themselves in such defiant terms to refuse to exhibit? Surely it would have been more generous and courteous to have given credit to the Council for having reasons for making this change in the character of the exhibitions; and if objectionable terms had been proposed to the consideration of the exhibitors, it remained optional for them to decide whether they would send their plants or not, without entering into a combination not to exhibit.

The spirit in which the exhibitors have acted appears to me to bear something of a rebellious character. They seem to have placed themselves in a false position, and have as much as said, "We must have our own terms, or we will not exhibit." I am informed they even prepared, and actually sent, schedules to the Council, with their own value of the prizes affixed, and in their letter, after proposing a conference if the Council desired it, they, in the concluding paragraph of the same, declare themselves pledged not to exhibit. The insertion of an anonymous letter, however great the authority, does not strengthen their case. You will perhaps say, "What is to be the end of this rignmarole?" The end is simply this, that if a mistake has been made on the part of the Council (and I am willing to allow they have made a mistake) then let the exhibitors do what becomes them as mortal men to do, who themselves are liable to make mistakes. Let them overlook the unintentional error on the part of the Council, let them banish all selfish feelings, and display that noble spirit of good will which is inseparable from the love of pure horticulture. However inconvenient the Saturday may be, let them choose the days fixed for the exhibition of their own specialities during the present season, feeling assured that some adjustment of the present disputed point may be made. Nor let it be forgotten there are many interests to be considered in the Saturday arrangement. There is a large proportion of Fellows, simply lovers of pleasure, gay meetings, and crinoline exhibitions: Saturday is to them their day of holiday. Of the difficulties and inconvenience attending Saturday exhibitions I am quite aware; but as the exhibitors cannot alter the arrangements for 1865, will they from personal considerations stand in the way, if their lives be spared, of altering and improving the schemes for 1866?—F.R.H.S.

CHÆROPHYLLUM BULBOSUM.

PERMIT me to ask the readers of THE JOURNAL OF HORTICULTURE, whether any of them can give a favourable account of the *Chærophyllum bulbosum*, or Turnip-rooted Chervil?

Unless others have met with greater success in their treatment of the seeds than has fallen to my lot, I fear the hope I had placed in these roots, as being a vegetable likely to be of great service in winter, will be disappointed.

It will be remembered that the introducer of these roots was Mr. William Paul, who exhibited some, I believe French-grown specimens, at the meetings of the Royal Horticultural Society. I am convinced very many, like myself, would be glad to receive any further hints tending to better success. It would seem that the secret rests in the seeds not germinating. I have tried a variety of ways having this object in

view. I have sown the seeds, and treated them precisely as advised, and I have soaked them in the autumn in warm water, placing them afterwards in sand kept moist all the winter. I have also sown these in the open ground in spring, and some upon hotbeds. The only success, however, I can note is, about eight roots produced last summer upon a south border. Over these seeds, however, I placed early in April a two-light frame, the plants came up in May, and the specimens produced were very large.—WILLIAM EARLEY, *Digswell*.

WINTER-FLOWERING PLANTS.

THE subject of winter-flowering plants is one, I think, which ought from time to time to be brought prominently forward, and the difficulty is as important as any, in a decorative point of view, that a gardener has to contend with. During the dreary months of winter, when our gardens are fast bound in the grasp of the icy king, and everything of a floral character, except, perhaps, the Christmas Rose, has succumbed to his severity—when the trees are leafless, and the earth covered with a carpet of snow; while the winds are howling through the bare branches of the skeleton-like forms which occupy our plantations and shrubberies, how pleasant to be able to walk to and fro in a nice genial temperature of some 50° or 55°. What a contrast to the outside desolation will such a warm greenhouse afford, sheltered from the nipping wind, and surrounded by all the beauty and loveliness of spring. How pleasing at such a season to promenade amid flowers of every hue, hanging like tassels, or standing like sceptres, or curving gracefully to meet your gaze, some of them filling the air with sweet perfume, until one could fancy oneself transferred to some fairy land. Surely the accomplishment of such a result is worth an effort; worth an occasional column in your paper; and worth all the accommodation necessary to secure it: and last, though not the least, deserving of a good show-house in which to enjoy the display.

Many plants flower naturally at that season, others by special treatment can be induced to do so, while others, again, by a little forcing can be brought in about the same time. Lists of such plants as flower through the winter months would very much assist in the attainment of this object, and in order to make a beginning in this direction, I send you a list of those that have flowered at this place during the months of December and January. Part of them have flowered in the stove, and part in the conservatory; but in a good show-house kept at an intermediate temperature, such as indicated above, I have no doubt that the whole would do well during the time they were in flower. I have purposely excluded Orchids from the list, in consequence of the letter published by you a short time ago, from Dr. Ainsworth's gardener, Lower Broughton, giving the names of those belonging to that lovely tribe that have flowered with him through the winter; but I cannot help mentioning that little gem, the *Goodyera discolor*, with its dark velvety leaves, and pure white flowers.

In the stove we had *Begonia insignis*, a fine variety; *B. nitida*; *B. Ingramii*; to which might be added *B. lucida*, white and very free; *Ardisia crenulata*, both varieties, more for their red and white berries than their flowers; *Eranthemum strictum* and *E. pulchellum*, the latter, a beautiful blue, coming into flower just as the former is over; *Euphorbia jacquiniiflora*; *Poinsettia pulcherrima*; *Hæmanthus albus*, a curious but pretty Cape bulb; *Heterocentrum mexicanum* and *H. roseum*; *Justicia speciosa*, very beautiful and lasting a long time; *Thysacanthus rutilans*; *Pentas carnea*; *Sericographis Ghiesbreghtii*; to which might be added *Goldfussia anisophylla*; *Manettia bicolor*; *Geissomeria longiflora*; *Aphelandra aurantiaca*; *Centradenia rosea*; and *C. floribunda*.

In the conservatory, of course *Chrysanthemums* take a prominent place in December; then *Camellias* follow through January, or earlier, according to the treatment they receive. *Primulas* (Williams's strain), are very fine. The Fern-leaved variety is a pretty addition. Besides these are *Epiphyllum truncatum*, varieties violaceum, purpureum, salmonium, magnificum, and cruentum; *E. Russellianum*, varieties rubrum and Snowii. The varieties of *Russellianum* succeed those of *truncatum*, and thus prolong the blooming season.

Of *Epacris* there are many sorts, *Lady Panmure* and *Viscountess Hill* deserving special notice; also *Erica mutabilis*, *E. colorans*, *E. melanthera*, *E. scabriuscula*, and *E. Lambertiana rosea*; *Correa picta superba* (scarlet), *C. delicata* (blush), and *C. magnifica* (white); tree *Carnations*, *Linum trigynum*, *Monochætum ensiferum*, *Luculia gratissima*, *Daphne indica rubra* (powerfully scented), and *Solanum capsicastrum* for the sake of the berries.

To these must be added *Hyacinths*, *Narcissus*, *Tulips*, *Crocus*, and *Snowdrops*; forced *Azaleas*, especially that beautiful variety called *amona*; choice *Rhododendrons* of the earliest varieties; *Acacias oleifolia elegans* and *rotundifolia*. If any of your correspondents can furnish the names of any others that flower through the winter, I, and no doubt many other of your readers, would be glad of the information.—THOS. JONES, *Rusholme, Manchester*.

EARLY KING POTATO—GENERAL CULTURE.

"E. W." asks for information respecting this Potato. In the first place, he is mistaken in the name. It was named the King Potato, or King of the Flukes, being a seedling from that kind. It is a second early, not an early one, a great cropper, and very handsome, having a beautiful straw-coloured clear skin, but, as "UPWARDS AND ONWARDS" says, of all shapes, still fit for exhibition, being beautifully equal. As you take a root up, part of the tubers will be good-shaped Kidneys and part quite round, but there will be more Kidneys than round ones.

I have taken prizes with this kind at several shows for early round, early Kidney, late round, and late Kidney; and after the show the Judges would hardly believe me the tubers were all one kind. The first year I grew them they took the first prize everywhere I sent them, including Birmingham, the International Show at Kensington, and at the Crystal Palace, so we may safely say it is the best exhibition Potato grown.

The heaviest twelve I ever grew weighed 12 lbs.

It is a good eating Potato if grown upon a light soil. I have seen it waxy, with a cavity in the centre, when grown upon a heavy or damp soil.

It was raised by Mr. Spencer, who a few years ago lived at Hartshill, near Atherstone. The same gentleman raised the Queen of the Flukes, the best late Kidney grown.

I obtained a few of each kind from Mr. Spencer, and found them both first-rate. If "E. W." will send me his address I shall have great pleasure in sending him a few Kings for trial. They are as important to the grower of Potatoes for exhibition as Charles Lefebvre Rose is to the Rose-fancier.

I am surprised that "E. W." uses manure and manure water to his Potatoes; I never use either, and take many prizes. Try this year half your Potatoes with manure, and half without. I will back those without for size and quality. I always select a piece of ground that has been highly manured the year previously for some green crop, such as Cabbage, Kidney Beans, or Greens, and dig two spades deep some time in the winter, or any time before frost, the earlier the better, keeping the top spit at the top, for clay or gravel is of no use. The early kinds I sprout in boxes, but only allow one top or sprout on each set, for to grow large Potatoes there should only be one top. The late kinds I cut till there is but one eye or set.

Eighteen or twenty inches between the rows I have found wide enough for early kinds, and from 2 to 3 feet for late ones; indeed, I have one kind that requires more than 3 feet, the top is so large. It is a scarlet Potato.

After growing this year and last forty-seven kinds, the following proved the best:—Sutton's Racehorse, first early Kidney; Leamington Kidney, rather similar to Jackson's Seedling, first early, all shapes like the King's; King's, second early; Dalmahoy, round second early; Red Regent or Red Holland, round late; Queen's, or Queen of the Flukes, late Kidney.

I dare say "E. W." will hardly agree with me about the manure, but let him try a few without it. Of course, if you plant a field with Potatoes, and that field is in a poor state of cultivation, manure must be applied; it should in that case be put on in November, and the soil well worked. A Potato only requires the soil to be moderately rich, and

luxuriance in the top is a bad sign for the crop. Again: Potatoes grown with manure do not keep well. I have seen clamps with every Potato rotten in them, and the people said they were a bad sort, when the adjoining clamps of the same sort grown without manure were all sound.

I dare say before now "E. W." has entered twelve Potatoes for a show, and put them up for a time in a safe place till the show morning, when to his amazement half or all of them had become rotten. If he will keep the manure from them in the garden this will not be the case, and his Potatoes will be larger.

The best way to keep them for an exhibition is to put them in damp drift sand. This is the best thing possible if they are a little green from exposure.

I have not found any advantage in planting very early. The end of March or beginning of April is quite soon enough for the general crop. Hay is a capital thing to keep the frost out, but I like mine to keep under the ground till the frosts are gone. It is very important to mould them up well when the soil is dry. The only manure I have found to suit the Potato is rotten turf.—J. CHOYCE, JUN., *Harris Bridge, Atherstone.*

VINES IN POTS AT COMBE ABBEY.

YOUR correspondent "P. M." has been rather too sharp upon me. Vines may be fruited in the time he names, and I wish I had no more difficult problem to solve than that.

The Vines which "P. M." saw here in 1863 were grown partly through necessity. In 1862 we were engaged in pulling down the old range of houses and putting up the new. During this transition some eyes which I had struck were but indifferently cared for, and at the end of that year were nothing better than mere straws. Early in the spring of 1863 about two dozen of these were cut back and put into heat; by June they had made very good growths, and thinking it a loss of time to grow them on for fruiting during the third year, I resolved to adopt the plan of Mr. Hardy, for which he drew upon himself at the time so much odium for tampering in such a manner with his permanent Vines. The Vines had run up about 6 feet, and before showing symptoms of ripening, they were stopped, denuded of all leaves and laterals, tied closely down to assist their breaking regularly, and continued in the same heat. They soon broke their latent buds, showed fruit freely, and all went on pleasantly throughout the autumn. The result was that which "P. M." saw, and to which he has been pleased to call attention.

Last year I had a little pit, 40 feet by 12, of pot Vines, in which we fruited thirty-eight Vines, each bearing from three to six bunches. Altogether there were 150 bunches, averaging in weight from $\frac{1}{2}$ lb. to 1 lb., and some of them $1\frac{1}{2}$ lb. per bunch. The Black Hamburgs maintained their usual good character; but if I may be allowed to give a preference to Black Grapes (but, in fact, I claim it), I must decidedly give it to the Trentham Black for magnificence of bloom, equality of bunch and berry, and every other good trait desirable. I was also very much pleased with the Golden Hamburgh, which had the same treatment as the others in this pit.

Much has been said about finding a stock for the Barbarossa. To me this seems about as ridiculous as "Diogenes with a lantern looking for an honest man." Why not grow it on its own roots? Whether the bunches grown here during the past season were a freak of nature or of mine, it matters little, the bunches were grown, and the Vine was on its own roots. I here give the opinion of the Barbarossa grapes in the words of my employer:—"The Barbarossa grapes were very good, very sweet, and thin-skinned. Decidedly better than Lady Downes', although the latter is decidedly a good Grape."

I take this opportunity of thanking those gentlemen who visited Combe, and gave public notice of those Grapes while they were still growing. Mr. McDonald, as might be expected from a man of his genius and enterprise, is a strong advocate for experiment by grafting; but in the case of the Barbarossa I believe he has but one opinion, and that is that it is best on its own roots.

The mania for grafting is at this moment running very high, and it will produce some very curious results.

ful results. In the midland counties Osborn's new White Winter Broccoli is inclined to be rather delicate, would it add, do you think, to the strength of its constitution to work it on a Brussels Sprout?—WM. MILLER.

LA CONSTANTE STRAWBERRY.

AFTER several recent efforts to throw a doubtful light upon this really grand Strawberry, I was particularly gratified this morning, on perusing the last Number of THE JOURNAL OF HORTICULTURE, to see that "A FRAGARIAN" (and a very clever one too), who evidently has no reason to further the interests of one party rather than another, renders full justice to the superior qualities of La Constante. Much has been said already about this splendid variety; still I may be permitted to add a few words, as I am, and shall always be, proud of having largely contributed towards its distribution in France, as well as in England and elsewhere.

Soon after I had procured the first plants from the raiser, M. de Jonghe, I sent some to my late and much-regretted friend Nicholson at Eaglescliffe; and I believe it is from thence that most parties who possess it now in Great Britain have obtained their stock. Mr. Nicholson, in one of the last kind letters he wrote me, insisted particularly upon La Constante being a kind that "ought to be in every garden." Still Mr. N. lived a good deal further north than Bedale. I have had the satisfaction of seeing with my own eyes, during several visits to England, the great success of La Constante with gentlemen who are numbered amongst the most skilful Strawberry growers; suffice it to mention W. Roden, Esq., of Kidderminster, and Henry Doubleday, Esq., of Epping, who I am sure will readily endorse what I say.

Mr. Thomas Rivers, a first-rate authority, writes in his last fruit catalogue as follows:—"No. 14, La Constante.—Large, conical, and of a deep crimson. Its peculiar aroma is remarkable. A great bearer. Much resembles seedling Eliza in its peculiar robust growth."

In America, where people generally have a great prejudice against European Strawberries, La Constante has obtained the highest honours, and at a Boston Show the highest prize, a silver cup, ever awarded to any Strawberry. It is now so popular in the United States, that they call it the best foreign Strawberry introduced.—FERDINAND GLOEDE, *Les Sablons, Seine-et-Marne.*

DUTIES OF A FOREMAN IN A GENTLEMAN'S GARDEN.

WILL you inform me what you consider the duties of a foreman in a private establishment, where the work is principally under glass? Ought he to be expected to look round the establishment every Sunday—say once—when he has what he terms permanent duty every third Sunday (about three hours)? Lodging is provided at the place.—YORKSHIRE.

[There is no rule for regulating the duties of a foreman in a private or any other establishment. These rules must in every place be a matter of arrangement between the head gardener and yourself, and it is best for all parties when these matters are stated clearly in detail. You should not, however, forget that the position of foreman gives you great advantages over the other gardeners, and especially when you are chiefly employed in the houses; and these advantages should lead you rather to increase than to lessen your responsibility. Now to your question—"Ought he to be expected to look round the establishment every Sunday—say once—when he has what he terms permanent duty every third Sunday (about three hours)?" In general we say Yes; and more especially when houses constitute your charge. No doubt if you wished to leave on a Saturday night, or very early on a Sunday morning, at times, there would be a willingness to make arrangements to meet your wishes; but without such arrangements we can easily fancy what would be the result in houses—say forcing-houses—at this season, if the person who generally superintended them was to leave them to anybody's care, just to do as he

liked, for two days out of every twenty-one days. Unity of system is one of the means of success. In such a case, whatever the time the foreman left, we should expect him to give the necessary instructions to the person in charge on Sunday, and also to see that everything was right before he went to sleep at night. The man who would decline to do this is not a proper person to be a foreman, and should not undertake the responsibility. In fickle times and fickle weather he will not confine his attention even to these two times, and, without this anxiety, there can be little progress.

There are few places where the duties of Sunday are not made as light as possible, by everything being watered that needed it on Saturday; but in most cases, where there is much glass, attention must be given to air, shading, covering, &c., not involving so much labour as attention, as a neglect of air-giving for half an hour or an hour might ruin a crop; and a whole bushel of "I'm so sorry—it can't be helped," will not fix Peaches on trees from which they have fallen. It is true that some men object to do anything on Sunday, take their stand on the fourth Commandment, decline to do what is not a work of necessity or mercy, and tell us that contributing to mere luxury is no work of necessity. Well, we find no fault with them for holding such opinions, and acting up to them, but we may question their prudence if they have anything to do with gardening in these times, when it is becoming more and more a matter of luxury. The looking after what is grown under artificial circumstances, must be considered quite as much a work of necessity and mercy as the giving of water and food to our domestic animals. There is, however, bad management in foreman and master, if work has to be done on the Sunday which could be equally well and profitably done on the Saturday or Monday.]

THE BALANCE SHEET OF THE ROYAL HORTICULTURAL SOCIETY.

As I do not expect that many of your readers will take the trouble to wade through the accounts of the Royal Horticultural Society, I propose, with your permission, to put forward a few of the most salient points in as short a compass as possible.

First, as to the form of the accounts. As long as the balances were in favour of the Society we had an account headed in one year "Assets and Liabilities;" in another year "Profit and Loss." In 1861 this account showed a balance in favour of the Society of £10,623. Since, however, the tables have turned, and our liabilities on each year's account have been greater than our assets, this heading has been carefully struck out, otherwise this year it would have stood thus—

Assets..... £3295 | Liabilities £10,939

I propose, before I finish, to show by what confiscation of property even this small amount of assets is obtained.

Secondly, as to the accounts themselves. The balance of £1433 from 1863 is equalled by the liabilities from 1863 of exactly the same sum of £1433; but there is this to be observed, that the sum of £500 for sculpture, which still remains unpaid, was in the 1863 account charged to the balance of £1433. In 1864 the admission fees were £420, in 1861 £1990.

The *faits* stood thus—

Receipts in 1864 £1483 | Expenses in 1864 £2174
" in 1861 4003 | " in 1861 2897

Thus, in 1864, with a vastly increased number of members, we have a loss of £691, where in 1861 we had a gain of £1206. Among the items of expenditure we have, in 1864, an item of about £400 for a *conversations*: as only three members of the Council were present to receive the guests, they cost the Society a little more than £100 a-head. It may be said that the loss has been caused by increased expenditure on horticulture; but, as an example, in 1864 the Society allowed their Fruit and Flower Committees £150, when in 1861 these same Committees were credited with £385. On the skittle alleys and funereal embellishments of South Kensington the Society expended the sum of £2552; but surely that is museum art, not horticulture. Pisciculture cost us £130. What did we get by it? Nothing. The Journal cost £338, and except as a vehicle for praising the

Council, what is it? The next item I beg to call your attention to is rent, rates, &c., £714. In the English of the Council rent does not mean rent, for this £714 is the amount of the rates, taxes, &c., without anything being allowed for the annual rent of £2400. I should like to analyse the other accounts, but fear to infringe on the patience of your readers.

To show how the assets balance of £2647 was arrived at, I take the life-composition account. By that a sum of £26713 stands to the credit of the life-composition fund. By the spirit of the Charter, and the 13th clause of the Agreement, this fund is sacredly set apart, under certain conditions, to meet the claims of the composition life-holders. This year, under the dictatorship of Mr. Cole, has been so terribly disastrous that, to prevent the Society seeing the whole amount of the deficit, the Council has (besides £500 of last assets), confiscated, out of this sum of £26713, no less a sum than £4066. This leaves the balance of £2647, really the remainder of the property of the composition life-holders, so sacredly guaranteed to them in its entirety by the Charter. This balance, even, does not really exist, as £2748 is now due to the Treasurer. Had this fund not been confiscated the deficit this year would have amounted to more than £15,000!

Now, shortly I propose to consider the effect of the balance sheet on the prospects of the different classes of Fellows. The annual subscribers will withdraw directly the insolvency of the Society is declared. As to the life-composition holders, their fund, guaranteed by the Society, is gone—not one farthing really remains. Practically, anybody now paying a life composition, pays it not on the guarantee of the life-composition fund and the Charter, but on that of an insolvent society—their money is spent before it is actually paid!

Lastly, as to the debenture holders. The Society has not paid a tangible amount of rent for two years. This debt, before the end of the ten years, when the gardens become forfeited to the Commissioners of 1851, will amount to about £20,000. To this sum must be added the sum of—say £3500 yearly deficiency, which, without interest, will amount to about £24,000. As the Commissioners, to whom this £20,000 will be then due, are only responsible for £20,000 of debentures, the unfortunate holders will have only Chiswick to look to for payment. What dividend will they be likely to get, after the public creditors for £24,000 have had what they can from the realisation of Chiswick?

One question more. Where is the interest on the debentures to come from next year? (see clause 14, "Agreement.") Do let us have one more struggle for honesty and the Horticultural Society. Let us try to prevent the evil day, when

"To E. T. Smith the gardeners sold,
Shall trodden be by holdens bold;
And Cremoer nymphs the livelong day
With D— and C— at 'skittles' play."

—AN UNFORTUNATE LIFEER.

THE ROYAL HORTICULTURAL SOCIETY.

WITH the snow whitening the earth, and the roads so slippery as to render locomotion, whether to man or horse, a task of no little difficulty and some danger, there was but little prospect of there being much to be seen at the weekly show, more especially as Begonias were to be its special attraction; accordingly we were not disappointed when we found none there, save a few from the Society's own garden.

Mr. Bull, Chelsea, sent some Araucarias, among which were Cooki, Bidwilli, and a nice little plant of Rulei; also, four plants of Libocedrus Doniana. W. Mercer, Esq., Staplehurst, had Eucharis amazonica; Lady Caroline Legge, Camellias; Mr. W. Smyth, gardener to Lord Sondes, Elmhurst Hall, a very good specimen Epacris, Ardisia crenulata, Scarlet Nonpareil and Boston Russet Apples, and Beurré de Rance Pears; and Major Trevor Clarke, Chrysanthemums Prince Albert and Andromeda. Mr. Melville, gardener to the Earl of Roseberry, Dalmeny Park, Edinburgh, sent his Improved Hardy Autumn or Winter Broccoli in which, from the leaves growing over the curd, the latter is protected from the frost and sudden thawing by which this crop is so frequently cut off.

WHITE ZINC PAINT.

I AM pleased to be able to inform your correspondent, "J. K.," No. 201, page 91, that three years ago I was recommended to use zinc white in lieu of white lead paint. I did so on some "frame work," and as I had not quite enough to complete the job, I finished with white lead. I have just examined each, side by side, and did I now use white paint, I should for the future continue to use white zinc; it is hard and smooth though dry-looking, whereas (as I have many times observed), all the oil appears dried out of the white lead, leaving a dry coat of lime-like substance that with little trouble will rub or wash off. This led me to ask the cause of a friend, an experienced house painter, and ask for a remedy. He replied, "Use (if it must be white), zinc white; but the most durable, and I think the best, colours of all other paints for out-door buildings, are stone colours."

I fully agree with him, having by chance, thinking the colour would best harmonise with its surroundings, had a little greenhouse painted with a tolerably light stone colour four years ago, and it is, though equally exposed, in a much better state of preservation than that where zinc white was used three years since, the shiny appearance given by the oil remaining to a much greater extent than in any other paint I have ever noticed out of doors; therefore, I recommend stone-coloured paints only, and biennial painting. One good coat of paint carefully laid on will then in most instances be sufficient to keep horticultural buildings in first-rate condition and appearance; and then, that "J. K." would find the annoyance of putty more imaginary than real, is the conviction of—R. H. POYNTER, *Taunton*.

AZALEA SHOOTS AND LEAVES TURNED BROWN.

Will you please give me your opinion of the enclosed pieces of Azaleas? My employer imported a large collection about fourteen months ago. They all did well last season, made good wood, and set well with bloom-buds. I anticipated a good show next spring, but my hopes are blighted. Soon after they were put into their winter quarters a few of them began to turn brown at the points of the leaves, and in time the whole leaf was brown. The brownness then got into the bud, and next into the branch, until the whole head of the plant was gone. I am puzzled to find the head dead, and the roots and stock in good health. If they began to go at the roots first I might then think it was some mismanagement; but I do not think it is that, as it is a general cry about here that most gardeners have their Azaleas more or less gone, or going. A friend of mine has lost a dozen specimen plants, worth £2 each, in the same way as that in which mine are going.—J. M., *Edgbaston*.

[We cannot make out the cause of this decay. We thought we noticed a trace of thrips, but could not be quite sure. Of course they have not been frosted? A similar case was brought under our notice last season; but in that case there was strong suspicion that they had been maliciously syringed with a saline or acid solution. We advised, however, the matter to be allowed to rest, as it would have been difficult to establish the point. We hope you have no suspicions pointing that way.]

GARDENERS' DWELLINGS AND CLOTHING.

YOUR worthy contributor Mr. Fish, I was glad to observe, has given prominence to the two very important matters of gardeners' dwellings and the clothing of men who are employed in forcing-houses, and consequently exposed to violent and sudden variations of temperature.

All who have a spark of humanity about them must admit that these are subjects of great importance, involving as they do the health and comfort, aye, and morality too, of a class who administer so largely to the most rational enjoyment and pleasure of their employers, and whose life, before they are capable of filling a head gardener's situation, is attended with a very considerable amount of privation. It must, therefore, surely be admitted that these are subjects well worthy of being brought under consideration in the pages of such a periodical as the *JOURNAL OF HORTICULTURE*.

The improvement of the dwellings of agricultural labourers has for some time been prominently agitated in agricultural literature with good results; and why should not the improvement of gardeners' dwellings be similarly dealt with in the gardening press? It certainly cannot be said that there is no necessity for improvement in the houses which are inhabited by both head and under gardeners. True, as Mr. Fish observes, there is improvement going on, and some few gardeners, such as Mr. Robson, occupy houses which may be considered models for even first-class establishments, being roomy, healthily situated, worthy of the intelligence and persevering energy of those by whom they are inhabited, and creditable to the employers and their estates. But this is by no means the rule, for it is well known that too many, both head and under gardeners, still occupy an apartment in which my lord and the squire would not trust their hunters or retrievers for a month, and in which, in fact, these animals would not exist in health. Too often are gardeners to be found huddled up into these north lean-to's, referred to by Mr. Fish, into the windows and doors of which the health and life-giving rays of the sun can never enter. Most especially is this applicable to the young gardeners of the establishment; they are huddled into some out-of-sight corner with a north aspect, and in numbers of cases have only one apartment in which to cook, live, and sleep, without the comfort-giving hand of a woman either to cook or clean for them. How, then, can it be otherwise than, as Mr. Fish instances, that the seeds of disease are sown and fostered in such places of abode? There they are under the necessity, after a hard day's toil, of inhaling over and over again the damp stagnant air of a small apartment with a chilly north aspect, which is rendered more poisonous still by being turned into the abode of a human being. Ventilation and aspect, which are so duly and carefully studied and provided for in the case of plants, are entirely overlooked in the housing of the human machines that are required to possess the intelligence and unwearied application which are necessary for the cultivation of plants.

This picture is a dark one, but not one shade beyond the truth. I could cite numberless instances as proofs of this. Doubtless great improvement could be brought about by head gardeners, both in their own and in the dwellings of those under them, were they to earnestly bring the matter under the consideration of their employers. I have no idea of heaping all the blame and responsibility on the employer. Surely there are, it is to be hoped, not many among the nobility and gentry who are so callous to the well-being and comfort of servants who suit them as not to take some steps towards at least mitigating the evils under consideration; and I know for a fact that many gardeners continue, and make up their mind to experience, all the ills entailed upon them and their offspring by small and unhealthy apartments, merely because they do not like to incur obligations or expense on their account. I submit that there is no obligation in the matter, and that a gardener who suits his employer has at least a moral right to be housed in such a manner that the lives of himself and family may not be placed in jeopardy. Such delicacy is a false delicacy, and the moral sense of that employer must be low indeed who will not listen to the representations of his servants in such a case, and take steps accordingly.

Speaking of gardeners' families I cannot refrain from referring to those who advertise their little ones as incumbances. What a libel upon the best feelings of our nature! Surely the term has been originally coined in the shrivelled heart of some old bachelor.

I agree fully with Mr. Fish as to the rash folly of young men employed in the hothouses needlessly exposing themselves suddenly, with their coats off and sleeves tucked up, to chilling winds, while they are perspiring at every pore. The strong may, and often do, brave such cruel and foolish treatment of themselves for years, but if they like to have grey locks they will wish they had acted otherwise, or the experience of their fathers is not worth much. The infraction of the laws of health in so violent a manner will sooner or later be followed by punishment and suffering, as surely as shadow follows substance.

I know of few employments which warrant more care in clothing than that of a young man who has the care of hothouses by night and by day, and in saying this I speak from

some experience. Such an employment requires warm clothing to prevent the sudden reactions which will otherwise take place in the system. Let me advise all young gardeners, and old ones too, to wear next their skin a flannel, and over that and under their shirt a chamois-skin waistcoat, double-breasted up to their throat, and reaching down to their loins. The writer never wore anything from which he derived so much comfort, and I may say safety against cold. It is light and pliable, and when coming out of a high temperature, with the blood at the surface, the wind cannot pierce the chamois and send the blood suddenly to the vitals to breed catarrh and other inflammations. I have to go frequently from hothouses into the teeth of a bitter east wind off the sea, and it is astonishing how little its effects are felt with such an article of clothing.

Mr. Fish refers to the good practice of old gardeners in preventing the cold frosty air from coming suddenly in contact with their young Cucumbers, and to their practice of "sifting" the wind through a mat, or something else; and on the same principle he might have wisely recommended gardeners to wear their moustache, which wise provision of nature, if good for the protection of the lungs of any class of men against cold air and dust, must be especially so in the case of young gardeners who have to attend to fires and work in hothouses loaded with moisture. I do not know whether Mr. Fish be patriarchal enough to recommend the moustache for the protection of the human lungs, but certain I am that he will not treat plants so cruelly as to deprive them of any appendage with which their Maker has furnished them for their protection.

By many a strong young fellow these precautions may be smiled at; but I would add my warning voice to that of Mr. Fish, that the strongest, if they live, will ultimately wish they had paid more attention to the laws of health.—ONE WHO IS COMFORTABLY HOUSED.

RAISING GOOSEBERRIES FROM SEED.

In the Journal of the 31st of January attention is called to raising new kinds of Gooseberries from seed. I give the results of an effort in that direction, which as regards success in number is poor encouragement, but for quality satisfactory.

It is five or six years since I selected ninety of what appeared the best seedlings, judging by the leaf, and although I have none but what I consider good, either as to size or quality, in my garden, and no other garden near it, there were twenty of the most worthless imaginable, and only two out of the ninety were worth saving.

Although not large, they are such distinct new varieties, and of such superior quality as to be well worthy of cultivation. No. 1 is a dull red, very early, very fine skin, full of juice, and very sweet, and to my taste superior to the Red Champagne. No. 2 is not a dessert fruit, but the most splendid in appearance for bright colour I ever saw; its syrup is the same colour, and makes a beautiful preserve both in colour and flavour. A nobleman's gardener, who has seen it, considers it the handsomest Gooseberry he ever saw; it is in appearance most like the Ashton Red, but nearly double its size, although not to be considered large compared with prize kinds.

It is desirable to raise improved varieties of fruit if possible; but if my trouble, time, and experience are any rule, there is not great inducement to make the attempt.—J. CARTLEDGE, *Kirton-in-Lindsey*.

THE CLIMBING DEVONIENSIS ROSE.

I HAVE received a very kind letter from Mr. Henry Curtis, of the Devon Rosery, Torquay, and also two splendid Briar specimens of the above Rose. He is kind enough to acknowledge the benefit that he has received from my articles of one kind or another. One of the specimens is on a dwarf Briar, and the other on a standard. The growth of both is quite wonderful. The Rose bids to be a great acquisition; the wood is not only luxuriant but of a hardy nature.

As letters addressed to me continually go to the Rushtons, in Yorkshire, I shall be obliged to all correspondents, if they will add the word Tarrant before Rushton.—W. F. RADOLFF, *Tarrant Rushton, Blandford, Dorset*.

METEOROLOGICAL OBSERVATIONS FOR 1884, WARINGSTOWN, CO. DOWN, IRELAND.

Latitude 54° 26' 52" North. Longitude 6° 17' 56" West. Height above sea level, 190 feet.

1864.	Evaporation.	BAROMETER.		THERMOMETER.				HYGROMETER.		RAIN.			WIND.				Clouds.	Frosty Nights, on Grass.			
		Corrected and Reduced to 32° Fahr. and Sea Level.	9.30 A.M.	3 P.M.	Monthly Range.	Highest of Month.	Lowest of Month.	Mean Max.	Mean Min.	Mean.	Max. in Sun Graded.	Min. on Bulb.	Mean of Wet Bulb.	Temperature of Ground 1 ft. below the surface.	No. of days on which rain or snow fell.	Amount.			Greatest amount in 24 hours.	Date of such greatest fall.	No. of days the wind blew from the following points.	No. of days the sky was overcast.
January	...	30.173	30.168	1.050	51	17	44.39	32.53	38.95	60	14	40.08	38.13	46.32	12	1.65	.33	12th	N. N.E. E. S. W. W. N.W. Calm.	12	22
February	...	30.046	30.027	1.330	52	16	43.79	32.79	33.74	59	13	38.26	35.32	39.43	12	1.19	.19	17th	N. N.E. E. S. W. W. N.W. Calm.	11	23
March	...	29.819	29.804	1.120	54	23	47.87	32.64	40.29	68	17	43.13	41.12	41.97	18	2.11	.43	18th	N. N.E. E. S. W. W. N.W. Calm.	11	20
April	...	30.249	30.218	0.750	71	30	50.86	30.00	49.18	80	25	53.13	49.74	48.01	13	2.05	1.10	3rd	N. N.E. E. S. W. W. N.W. Calm.	10	8
May	...	30.147	30.138	0.522	81	30	51.51	42.40	53.93	93	29	59.32	53.61	57.61	14	2.12	.44	3rd	N. N.E. E. S. W. W. N.W. Calm.	10	3
June	...	30.020	30.002	0.860	71	31	63.09	41.73	52.86	91	28	58.18	51.92	58.60	20	2.44	.55	9th	N. N.E. E. S. W. W. N.W. Calm.	12	0
July	...	30.514	30.121	0.710	83	43	70.52	50.16	60.38	93	29	63.08	57.92	62.26	7	1.15	.61	31st	N. N.E. E. S. W. W. N.W. Calm.	14	3
August	...	30.265	30.220	0.908	85	32	69.55	45.68	57.52	93	29	62.56	56.21	62.07	11	2.28	.61	31st	N. N.E. E. S. W. W. N.W. Calm.	12	4
September	...	29.968	29.955	1.189	71	37	63.10	43.47	51.29	78	23	50.68	45.53	51.48	13	1.98	.88	3rd	N. N.E. E. S. W. W. N.W. Calm.	14	4
October	...	29.678	29.678	1.466	64	29	58.48	39.97	47.72	73	21	46.10	42.81	46.10	13	1.98	.65	29th	N. N.E. E. S. W. W. N.W. Calm.	15	7
November	...	29.854	29.862	2.122	53	27	48.47	33.33	41.90	67	16	44.38	40.51	42.88	13	1.97	.51	28th	N. N.E. E. S. W. W. N.W. Calm.	16	15
December	...	30.015	30.987	1.330	64	19	41.09	34.54	39.07	57	16	40.78	39.51	42.88	15	2.13	.51	28th	N. N.E. E. S. W. W. N.W. Calm.	17	19
Total	...	396,792	350,174	13,376	795	337	673.02	467.04	571.16	893	302	610.33	571.26	608.39	147	25.44	...	...	N. N.E. E. S. W. W. N.W. Calm.	152	126
Mean	...	30.400	30.400	1.114	66.25	28.08	56.08	38.02	47.69	74.41	25.16	50.86	47.60	50.74	14.17	2.12	...	...	N. N.E. E. S. W. W. N.W. Calm.	...	10.5

The highest barometer during the year was 30.40 on Nov. 6, at 9 A.M. Calm.

The lowest barometer during the year was 29.678 on Nov. 14, at 9 A.M. N.N.W.

The highest thermometer of the air was 87° on Aug. 14. S.

The lowest thermometer of the air was 16° on Feb. 23. N.E.

The greatest rain-fall in 24 hours was 1.10 on April 3; wind calm.

The prevailing wind, S.W., 64 days.

The highest barometer during the year was 30.810 on Nov. 6, at 9 A.M. Calm.
The lowest ditto... 28.718 on Nov. 14, at 9 A.M. N.N.W.
The greatest heat of the ground at 1 foot deep was 73.50 on Aug. 16 and 17.
The greatest cold of the ground at 1 foot deep was 13.50 on Feb. 26 to 29.
The prevailing wind, S.W., 64 days.

NOTE.—I have reason to think that my barometer reads 1-10th of an inch too high.—T. WARR.

THE ARBORETUM—DECIDUOUS TREES.

(Continued from page 90.)

ACER (THE MAPLE).

The genus *Acer* includes a great variety of species, a few of which are evergreen, but these are chiefly tropical or sub-tropical. All, or nearly all, the deciduous kinds are perfectly hardy, and most of them extremely valuable for their timber. Some are low, others medium-sized trees; but *Acer eriocarpon*, *A. macrophyllum*, and other large-leaved kinds form timber trees of considerable magnitude. Their foliage is as varied as their size, and gives them their ornamental character. The Maples, therefore, should be a conspicuous feature in the arboretum. The flowers are green and inconspicuous; the fruit is double, each division containing one single-seeded cavity, and extended at the back into a kind of wing, called a key in English, or *samara* by botanists.

ACER TATARICUM (the Tartarian Maple), has heart-shaped leaves, oblong, unequally serrated, and usually undivided; hence, a very distinct variety. A native of southern Asiatic Russia, Tartary, &c.

A. SPICATUM (the Spiked Maple).—A low tree found in the United States and Canada. Loudon says, "That it is very ornamental in autumn, from its small keys which are fixed upon slender pendulous spikes, and have their membranous wings beautifully tinged with red when ripe."

A. OPULUS (the Guelder-Rose Maple).—A small tree growing plentifully on the Pyrenees and French Alps. "It is considered preferable to all the other Ma-

ples for its wood, which is hard and compact, not easily split, and so homogeneous in its texture that it is almost impossible to distinguish it in its annual layers."

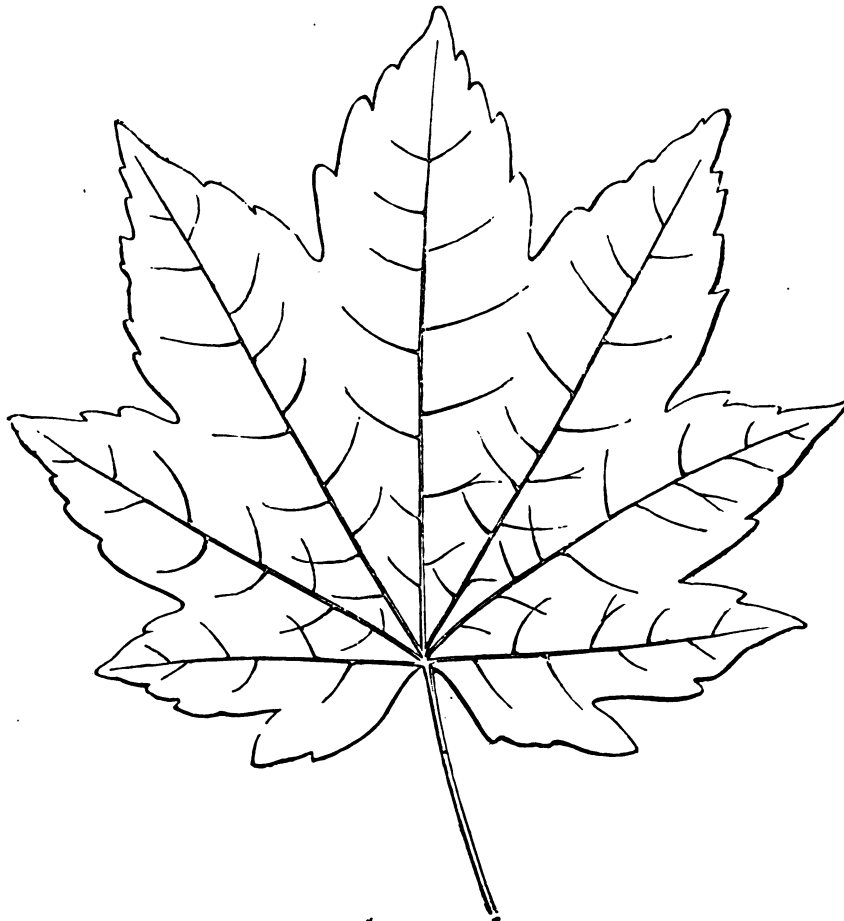
A. OBTUSATUM (the Neapolitan Maple).—Leaves heart-shaped, roundish, five-lobed, woolly beneath. Found in Hungary, Croatia, and many parts of Italy. It frequently reaches the height of 45 feet, and is extremely striking with its reddish purple branches. Of this beautiful tree we read

"It is certainly very singular that so fine a tree as this, occupying so large a tract of country, frequently visited by English tourists, should be almost unknown in this country; and yet, although it is perfectly hardy and very easily multiplied, it is scarcely ever met with in any but botanical collections." Here, then, is a case calling for attention. Loudon says there is a specimen in the arboretum at Chiswick

If so, the Royal Horticultural Society would do well to propagate and distribute it. I am inclined to believe that the *Acer* reported by Mr. Gordon, in the Number for September 6, 1864, is, in reality, *A. obtusum*, his description corresponding with it, and the distinctive character between it and *A. platanoides* correctly pointed out. Although Loudon has given *A. Lobelii* as a variety of *A. platanoides*, he evidently had some doubts about it, as may be seen by referring to his "Arboretum," vol. i., p. 431. I feel no hesitation in stating my belief, that when trees are more generally studied, and their character better understood, it will be found that many that now go by a distinct name will be found to be the same as some other variety. Of *Acer obtusum* there is no doubt; of *A. Lobelii* there appears to be much. So *A. opalis* (Italy), and *A. opulus* (France), formerly described as two different kinds, are undoubtedly but one.

A. MONSPE-SULANUM (the Montpellier Maple), has leaves slightly cordate, with three entire, nearly equal, diverging lobes. Found in the south of France, and in Spain, in rocky situations. In its native countries it sometimes attains a height of 40 feet; but in England the tree is much less, and "may be considered as purely one of ornament, and as such, it well deserves a place in every collection."

A. PLATANOIDES (the Norway Maple).—One of the finest and best known of the exotic Ma-

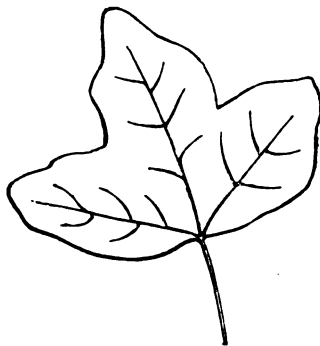
*Acer circinnatum.*

ples, with very handsome, glossy, deep green leaves, not unlike the common Sycamore. A striped variety of this species, called by gardeners the Silver-striped Maple, is sometimes met with in kept grounds. Loudon describes another variety of it, called *A. platanoides laciniatum*, as very distinct, with leaves deeply and variously cut. *A. platanoides purpureum* can hardly be reckoned as another variety.

A. MACROPHYLLUM (the Broad-leaved Maple).—Leaves divided into five deep, spreading, slightly lobed segments, the middle one of which is often narrow at the base, and the lower ones generally smaller than the others. The finest of the North American varieties. It also produces useful timber.

A. VILLOSUM (the Downy Maple).—Described as a large tree, found in the Himalaya mountains, approaching the limits of perpetual snow. There are very few specimens

in England, and it is one of the kinds but yet very little known.



Acer Monspessulanum.

A. STRIATUM (the Striped-barked Maple).—An American variety, growing from 10 to 15 feet high, forming a considerable part of the underwood among Beeches, Hemlock Spruce, &c. Its wood, which is very white, is useful for inlaying. When cultivated it grows much larger than in its native wilds. "The trunk and branches are covered with a smooth green bark, longitudinally marked with black and white stripes, by which the tree is readily distinguished at all seasons of the year." It is likewise remarkable for the bright rosy tint of its young leaves in spring.

A. SACCHARINUM (the Sugar Maple).—Leaves five-lobed, taper-pointed, and very coarsely toothed. A native of British North American provinces, where it is found in immense quantities, giving in autumn to the woods of those countries a fine crimson hue, caused by the changing of the leaves. It is called the Sugar Maple, from the saccharine matter contained in the ascending sap, from which brown sugar is obtained. It is said that the Sugar Maple does not thrive well in England, and that even when in health it does not attain a greater height than 15 feet, whereas in its native home it has been found to reach 80 feet. This may arise from the comparative mildness of our winters, or its being subjected to much smaller extremes of temperature at opposite seasons. It would be satisfactory to know if there are specimens which have exceeded 15 feet in this country.

A. ERIOCARPON (commonly known in America as the White Maple).—It is a very rapid grower, and its wood is of little value except for charcoal for gunpowder. "It is often

confounded with *A. rubrum*, which in the leaves it nearly resembles, but it differs in its fruit and flowers."

A. RUBRUM (the Red Maple).—It derives its name from the deep red colour of the flowers in spring, and the leaves and seed-vessels in autumn. The leaves are heart-shaped at the base, glaucous beneath, deeply and unequally toothed, very much like *A. eriocarpon*, but the leaves are altogether smaller than that variety. Its wood is also harder and of a finer and closer grain; hence, like the other harder kinds of Maple, it is easily wrought in the lathe, and acquires by polishing a glossy and silken surface. It is one of the most ornamental of the Maples, but thrives best in damp situations. Found in Canada, and abundantly in different parts of the United States.

A. CIRCINATUM (the Curled Maple from North-western America).—Its leaves are seven-lobed, the lower two smaller than the others, acutely notched. Loudon says, "The wood is fine, white, close grained, very tough, and susceptible of a good polish." We are told that it is a small and almost worthless tree. The light tint of its foliage, and the regular form of its leaves, give it a distinctive character, and a right to a place in the arboretum.

A. CAUDATUM is remarkable for the long-pointed middle

lobe of its leaves, whence its name. It is found in the higher regions of Himalaya Mountains, in Nepal. It is as yet but little known in this country.

A. BARBATUM.—An American variety, and it must be considered a shrub rather than a tree. It has been propagated and distributed under the name of *A. trilobatum*, but it is seldom met with.

A. PALMATUM is described as a Japanese kind, introduced in 1832. It is also said to be a very striking variety, which, judging from whence it came, would most likely be the case. Loudon thought it rather tender; but now that we know more about Japanese plants, there is not much fear that it would not flourish in our climate.

Can any one kindly furnish information on this or any other Japanese variety?

A. CAMPESTRE is the common Maple of our shaws and hedgerows.—ADOLPHUS H. KENT.

(To be continued.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

It is now necessary to determine what the different quarters of the garden shall be cropped with during the season. The chief rule to be observed with all annual vegetables is never to have two crops of the same class directly following each other. Though excellent plans of rotation may be laid

down, yet the period that will elapse before the ground is again occupied by a similar crop will depend upon the wants of the establishment and the quantity of ground at the disposal of the gardener. Those who require to have several crops on the ground at the same time will find that Celery is a good preparation for Carrots, Turnips, Parsnips, Onions, and early Cauliflowers, or for Peas, with Potatoes and Winter Greens, or Broccoli, between the rows. Autumn-sown Onions may be succeeded by Spinach, Lettuce, &c.; and early Cauliflowers by autumn Onions. Spring-sown Onions will be advantageously succeeded by Cabbages in beds, with Scarlet Runners between; and if the Cabbages stand all summer and next winter the ground will come in in the spring, along with Broccoli ground, for Celery, Potatoes, and Peas, the early Potatoes being planted in the trenches, and the Peas sown on the ridges. *Asparagus*, give plenty of air to this and all other crops in frames, and make fresh beds. *Carrots*, sow in frames, and thin those already up. Sow seed for succession crops. *Cauliflowers*, plant out from the seed-pans all the young plants before they become too much crowded, and if needful make fresh sowings. *Cucumbers*, the fruiting-bed should now be made, if the seeds are sown; and as soon as the heat is up the lights should be raised to allow the steam to escape. After this has taken place, twice or three times a-week fork up the dung to the depth of a foot or more until the plants are nearly ready to turn out. As soon as the seeds are up, and the two seed-leaves fully developed, pot in leaf mould in 48-sized pots; let the roots touch the bottom, and only partly fill the pot with soil, adding more at intervals of a day or two. *Lettuce*, sow a crop of Cos in frames and in the open ground. *Potatoes*, plant some early sort in a sheltered situation if not already done. *Spinach*, a small quantity of this may now be sown with advantage.

FRUIT GARDEN.

If any root-pruning of fruit trees has yet to be done let this be attended to without further loss of time, and see that trees exposed to wind are securely staked. Prune Raspberries. Any Gooseberries or Currants not previously pruned should forthwith be attended to. Make arrangements to procure a sufficient supply of pea-sticks, and collect fir boughs to protect the blossom of Peach and Apricot trees.

FLOWER GARDEN.

See that all planting is completed forthwith. Improve as much as possible all outlines. Plant fresh masses or groups where necessary, and introduce specimen plants where fitting opportunities offer. It is bad taste to plant single specimens in recesses. They should be used as a general rule to give deep shadows, and to throw the prominent features into bold relief. Give lawns a good rolling after wet. Proceed with edging the walks; keep these clean, and roll frequently to make them firm for walking upon, and also to prevent the growth of weeds. Where it may be necessary to increase the stock of any of the varieties of Dahlias these should be placed in heat at once in order to secure cuttings. Look to Crocus bulbs, &c., planted in beds, and protect them from the depredations of mice. Auriculas may now be permitted to grow, and must be well secured from frosts and cold rains. Heartsease may have the earth stirred between them as soon as the weather will permit, and some well-decomposed cowdung between the plants will greatly increase their size.

GREENHOUSE AND CONSERVATORY.

Shift and tie out Pelargoniums as may be required, and allow them plenty of space after this time, with all the light possible, and a free circulation of air whenever the weather will permit, but avoid cold north-easterly winds, which are very injurious to plants in active growth. Do not allow herbaceous Calceolarias to suffer for want of pot-room, as a check at the present season might throw them prematurely into flower. Cinerarias will now require frequent shifting and placing at great distances from each other, in order that the air may be permitted to circulate freely amongst them. Lose no time in improving the drainage of any specimens that require such attention, and endeavour to secure a healthy vigorous root-action, which is of great importance, especially in the case of hardwooded plants. In greenhouses lamp and mildew are the great enemies to be guarded against, and these must be sharply looked after, especially in the case of plants that have not ripened their growth

If the former is troublesome it must be got rid of by means of free ventilation on mild days, using a little fire heat at the same time; and for the latter a dry airy atmosphere is the best preventive, but the plants should be frequently examined, applying sulphur on the first appearance of the enemy. Very little water will be required here at present, but the plants should be carefully looked over about twice a-week, so as to make sure that nothing is allowed to feel the want of it. For mixed greenhouses it is somewhat difficult to give precise directions. Plants of all climes occasionally obtain a place here, and no special treatment in regard to temperature can long be indulged in with impunity. As a principle, therefore, of frequent and somewhat harmless application, we would advise a rather free increase of heat on sunny days early in the afternoon for a few hours, sinking at night to the old point, or nearly so. In this structure there will frequently be found *Ericas*, *Pelargoniums*, New Holland plants, bulbs, and even Orchids. A division of these families should therefore be made. Let the Orchids, bulbs, and plants of warm climates occupy the warmest end with little air, and the *Ericas*, &c., the other, with a freer circulation, the *Pelargoniums* may stand midway.

PITS AND FRAMES.

If your dung is properly prepared and quite sweet, for propagating Verbenas, Fuchsias, Petunias, &c., get a bed made up as quickly as possible below the surface of the ground, where it will retain its heat much longer than on the surface.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

HERE we have done little out of doors, as until the frost of Thursday morning the ground was too wet to do anything but trenching, and even that would be better delayed until the ground is drier. Turned over some ridged-up ground intended for Carrots, Potatoes, &c., in order that it may be the better sweetened by a fresh exposure to the frost.

Potatoes.—Planted some frames, each set having been previously well rooted in small pots. These we planted (Ash-leaved) 15 inches from row to row, and about 7 inches in the row. We have planted thinner and thicker, but we think the above is about the best for getting the most produce in little room, and especially if the sets have been started in small single pots, as they do not grow quite so vigorously afterwards as those planted out in a bed at once. Planted out also a lot in an earth pit, covered with old sashes, a little farther apart from row to row, and they also had a slight bed of warm leaves below them. They will succeed those in frames, as the latter will do those in large pots, to some of which we gave an earthing up, chiefly of loam and leaf mould, to prevent the tubers near the top being greened. These have grown so very strong that we have been obliged to move the pots to give them more room, so that the light and air may play around them, as if the pots stand so thick that the heads look like a thicket they do not tuber so quickly, or ripen so well, so as to become mealy, without which, in our opinion, a new Potato is little better than a Jerusalem Artichoke. When these and our early Potatoes are apt to grow too long in the stalk, or stem, we do not check them by cutting off the top, but we nip out the terminal buds, which keeps them dwarfer and, we believe, does no harm. It is owing to the little head they make that among all the fine new kinds, we prefer the Ash-leaf, the Early Frame, Early May, &c., for all early work. Out of doors they may be sooner cleared off the ground, or the next crop may be planted between them with less risk of injury to either. As respects autumn planting we consider it to be applicable chiefly to light dry soils. In heavy rich land the sets are apt to be much injured in winter, and the produce comes no sooner than from careful spring planting. Those above, planted in frames and the earth pit, were left in the ridge form, so that a little more earth might be added afterwards in a nice sunny warm day, the soil used being partly fresh and partly what had been used for Melons and Cucumbers, but all in a nice friable condition, and dry rather than wet. For placing over such a mild hotbed the soil should be drier than for ordinary planting, as moisture will

ascend from the damp leaves. One reason for having the Potatoes at once in the ridge form was that the hollow between might be appropriated to

Peas Sown on Turves.—These were cut 4 inches wide, from 2 to 3 inches deep, and 15 inches long, and had a groove 1 inch deep cut along the centre, in which the Peas were sown, and covered with light soil and leaf mould. The kinds used were chiefly Sangster's No. 1; Sebastopol, a kind sent to us last year, and which promised to be early; Tom Thumb, Bishop's Dwarf, &c. These would be transplanted in pieces to rows in the open air, when the roots were peering all through the turf, and the soil outside was nice, warm, and mellow; and after many years' trial, we find this plan gives us rather earlier Peas, and with much less trouble than having to look after slugs, rats, and mice all the winter. Broad or garden Beans were sown in the same manner, only the groove in the middle of the turf was made deeper. Some were the Dwarf Fan, the Mazagan, and the Early Long-pod. The last is a very sweet prolific Bean, and in our opinion much more profitable than some of the crack Wonderfuls, which do not produce in proportion to the length and size of the pods. When it becomes fashionable to dress the young pods like young fresh Kidney Beans, then, of course, the size of the pod might be an object.

Gave more room to the Tom Thumb Peas in 8 and 12-inch pots in a frame, as we cannot as yet give them a better place. They would be more forward if they had a little dry heat. Everything seemed to prick up the foliage to the sun of Thursday, as we have scarcely seen his rays for three weeks, and much growth in such circumstances was rather to be avoided than encouraged.

Carrots.—Made up a slight hotbed chiefly from tree leaves for a two-light box, and after covering with fresh light soil for 7 inches, sowed with Early Horn and Radishes. We often sow broadcast, but this time we drew slight drills $4\frac{1}{2}$ inches apart, and sowed one row with Carrots, and the other with Radishes, of the Early Frame kinds. This will enable us to draw the Radishes without disturbing the ground about the young Carrots. If these Carrots are left rather thick and the most forward regularly pulled, we know of nothing so economical for produce as such a bed. The Dutch Forcing Carrot will give a great number of little dots, half the size of the Horn Carrot. Seedsmen should be careful of the quality of the latter, so as to save only from high-coloured specimens, as though lighter-coloured ones may be equally sweet, they will not please the cook. The same remark applies to Beet. It cannot be too dark. Even if equally rich in saccharine matter it will not please; but the darker in colour the richer it will generally be. The size is of less importance; in fact, many prefer roots from 1 to 2 inches in diameter to those which are larger.

FRUIT GARDEN.

Out of doors pruned a little on such days as Thursday. On a wet day pruned the trees, Peaches and Nectarines, on the back wall of an orchard-house. The trees are tied to cast metal nails fixed in the wall as studs at regular distances, which prevents the necessity of filling either a new or old wall with nail holes, one of the best refuges for insects and their eggs and larvæ. The old pieces of list, and clippings from the clothiers, are just as nice nests for eggs, &c., as the best breeders among insects could wish. We will wash all these trees, and also the wall, slightly with soap water, as soon as we have another suitable day, before painting them over with clay, sulphur, or a little Gishurst. In the meantime we have syringed all the wood and the wall with soap water at about 160° in temperature.

Strawberries.—No weather could have been worse for early ones swelling or in bloom, but a few days like Thursday will make them all right. We have moved all the most forward where they could have most sunlight and air, and took in a lot more from frames, where they had just been started slowly and gradually. Frames or pits with just a little bottom heat below them are very good for this purpose; but unless with those having considerable practice it is dangerous to plunge the pots into anything like a hotbed. A place with a little dry heat, which you could make moist at will, would be better than any place of a hotbed character. When the latter is used the little heat from it will bring on the plants gradually, but it will be safer to set the pots on the surface, or merely fix them in the bed an inch or two in

depth. We have known of hundreds of fine plants that did little or no good just from plunging the pots, and thus allowing them to get too hot at the roots. Last year we prophesied great results from a set of plants, but the owner did but little with them, and sent us a sample of the pots to look at them. When we turned the plants out in October, 1863, the ball of roots was as firm as a Dutch cheese—fine bold roots, through as well as round the outside of the balls, so thickly that you could scarcely have inserted a needle point between them. When we turned out the pots sent in February there was nothing but brown decayed roots round the ball—not a vigorous spongiolo to be seen. Further disclosures made all apparent—the hotbed had overdone the roots, and the top suffered in consequence. Where there is the least chance of extra heat from beneath the pots should not only stand on the surface, but it would be better if they stood not on the bed at all, but on slips or shelves of wood. Even if no danger accrues to the bud from plunging, any great stimulus by heat at first is apt to encourage foliage and leave flower-buds lagging behind.

When a viney or Peach-house is to be started, it is just as well to set the Strawberries in their place at first, and thus they come on gradually without any danger of the roots being injured. We have always gathered earlier, however, in a Peach-house, when the plants had been encouraged a little under glass previously, and for all succession crops it is better to have the plants used to heat before they are taken into the forcing-house; but in all such cases whatever bottom heat reaches them should be very moderate indeed.

Owing to the heat and dryness of last season, our plants are in smaller pots than usual, except where two or three are in a large pot. The bulk of our early plants are in four and five-inch pots. Of these we may give more room to a few of the latest used, but we will not repot any to be used for a month to come, if at all, as a good produce may be had from small pots with rich nourishment. As soon as we can we will give a lot of plants, runners of last season, more room in a border, with leaf mould and rough loam placed firmly round them, and after March we can lift these with large balls, and either pot or plant under glass at once. Such fresh-potted plants would be of little use now. Those thus taken up later do very well even in pots, especially if the pots are plunged in a mild hotbed, and plenty of air given to the tops to keep them cool. Here a little heat at bottom would bring the roots into activity and cause them to press against the sides of the pot, which is a different thing from roasting and parboiling roots that were as thick as they could be clustered there the previous autumn.

In a fine day the blossoms should be shaken, and a fine brush or a feather drawn over them to scatter the pollen. In a fine sunny day a slight dewing from the syringe, not a drenching, will also help the same process, just as it is helped out of doors by a warm, sunny, slight shower. An excess of damp would be apt to wash off the pollen. A dewy drizzle attended with heat and sunshine seems to open and disperse the contents of the pollen-cases. In December and January it is not uncommon to find flowers with but very little pollen, or imperfect anthers, but if the female organs are all right the dusting of the pollen from other flowers will make up the deficiency.

Sprinkled from the syringe Vines and Peaches, and Figs moving. Where there is a moist atmosphere this is of less consequence; but if these fruit trees have been painted over with Gishurst or other paints, as sulphur and clay, it is as well to soften it a little by the syringe before the buds open.

We forgot to say, as respects the orchard-house, that we watered the ground for a width of some 3 feet from the wall, as when pruning we found a few buds came off as we run our hand along them when cutting, which we attributed to overdryness. Now, were we to soak all the space at once, the evil might be increased by a too great stimulus at once. We forgot, also, to say, that after syringing the back wall and the trees on it, we would have let the frost, 5° or 6° at least, into the house, but we could not do so at present, as our fruit trees in pots are crowded together as closely as possible, and the rest of the floor is covered with Geraniums and bedding plants, which we have kept by shaking a little rough dry hay over them in frosty nights, and by putting a small fire in an iron stove when the frost was very severe. We shall be glad when we can get all these things out, in order

that we may keep back the blooming of the trees as much as possible. This is one of the secrets of success in unheated houses. When the fruit is nicely set, it is easy to hasten maturity by shutting up early with sun heat. To all with unheated fruit-houses who have not had much practice, we would, as one of the secrets of success, say, Use every means except shading to keep your buds from opening prematurely. Of course, when, as in our case, such a house must serve many purposes, it must be treated accordingly; but in an orchard-house with nothing but fruit trees, we would prevent the frost entering the soil to any depth, and if there were trees in pots or tubs, we would protect them, but now, unless in storms and very severe frosts, we would keep the houses open night and day until the buds began to open, when we would shut up on all nights except very mild ones.

ORNAMENTAL DEPARTMENT.

Went on potting Lycopods, stove and greenhouse plants, and would give bedding plants more room if we knew where to put them. Other matters much the same as last and previous weeks, which see. The only work out of doors has been turning in the rough rotten leaf mould which had been scattered on the ridged-up flower-beds and borders, and preparing some turf earth-pits for the work to which they will be soon applied. In turning over the ridges of the beds the dung will be prevented blowing about, whilst it will be kept near the surface, so as to be well aired and sweetened, as well as the earth, by exposure. The earth-beds had been helped with a little turf between the layers of earth in the walls, and turf all along the top. In the course of years the walls had crumbled inwards considerably, leaving the top turf hanging over them, so that, by walking on the top, there was a danger of bringing the wall down. Turf was too scarce to make up the deficiency, so earth was firmly beaten into the hollows, so as to come in a straight line with the overhanging turf; and, as these pits had been injured by the falling of large trees, all defects on the top of the walls were made good by fresh turf. We have not half finished yet. We mention this, however, chiefly for the benefit of our friend "WYSEIDE," p. 111. In beating this inside wall of earth the man left it firm, smooth, and shining from his spade, thinking, no doubt, and quite correctly, that he had done the job, as far as he went, very nicely, and in a workmanlike manner. In summer we would have let well alone, for a number of cracks would be of little consequence; but as we may expect some frosts yet, and we did not wish the wall to be thrown down, we asked the man who did it to make his smooth surface all rough by pulling the teeth of a rake over it gently. The Editors supply the reasons. We could say a good deal of the blanket theory. We would advise the following experiment:—Encase a bottle firmly in a dry rough woollen jacket, and another, also dry, in a similar coloured cloth of smooth calico or linen, and expose both to the sun, or any other heating medium, and he will find the contents in the smooth-covered bottle will become the hottest. We are sure the reverse will just take place if both materials outside the bottle are equally kept wet, and exposed to heat. We place a bottle of water or wine in a tight-fitting woollen stocking, keep it wet, and expose it to the sun, when we wish to cool the liquor inside, not because the woollen stocking will evaporate faster than a cotton one, or one made of hard linen, but because the woollen absorbs and retains the liquid we apply much better than the other material. The subject is one of considerable importance, and we shall be glad to hear "WYSEIDE'S" conclusions.—R. F.

TRADE CATALOGUES RECEIVED.

Henry Brown, 4, Commutation Row, Liverpool.—*Priced Descriptive Catalogue of Garden and Agricultural Seeds, Plants, Shrubs, Trees, &c.*

Hooper & Co., Central Avenue, Covent Garden Market, London.—*General Spring Catalogue of Flower, Shrub, and Kitchen Garden Seeds.*

COVENT GARDEN MARKET.—FEBRUARY 11.

Notwithstanding the severe weather the market continues to be well supplied. There are still somewhat scarce, but both houses and granges are suffi-

cient for the demand, and, as remarked last week, some new ones may now be had. Greens of all kinds are plentiful, and Salads arrive daily from the continent. Green Peas from Lisbon, and a few Tomatoes, have made their appearance. Of Shadocks, a large parcel has arrived from the West Indies. Some new Potatoes from Malta and Bermuda are to be had at 4d. per pound. In the Potato market there is still a heavy stock, and prices are unaltered.

are unlimited.					s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½ sieve	2	0	to 4	0	Melons.....	each	0	0	to 0	0	0	0
Apricots.....	doz.	0	0	0	0	Mulberries....	punnet	0	0	0	0	0	0
Cherries.....	lb.	0	0	0	0	Nectarines.....	doz.	0	0	0	0	0	0
Chestnuts.....	bush.	14	0	20	0	Oranges.....	doz.	5	0	10	0	0	0
Currants, Red.....	½ sieve	0	0	0	0	Peaches.....	doz.	0	0	0	0	0	0
Black.....	do.	0	0	0	0	Pears (kitchen)...	bush.	5	0	10	0	0	0
Figs.....	doz.	0	0	0	0	Pears.....	doz.	3	0	6	0	0	0
Filberts.....	100 lbs.	40	0	0	0	Pine Apples.....	lb.	0	0	10	0	0	0
Cobs.....	do.	50	0	60	0	Plums.....	½ sieve	0	0	0	0	0	0
Gooseberries...½	sieve	0	0	0	0	Pomegranates....	each	0	6	1	0	0	0
Grapes, Hamburgs	lb	7	0	12	0	Quinces.....	½ sieve	0	0	0	0	0	0
Muscats.....	8	0	14	0	0	Raspberries.....	lb.	0	0	0	0	0	0
Lemons.....	100	5	0	10	0	Walnuts.....	bush.	14	0	20	0	0	0

VEGETABLES.

		s.	d.	s.	d.			s.	d.	s.	d.		
Artichokes	each	0	0	to	0	0	Leeks.....	bunch	0	2	to	0	3
Asparagus	bundle	10	0	15	0	0	Lettuce.....	doz.	1	0	2	0	0
Beans Broad.....	½ sieve	0	0	0	0	0	Mushrooms.....	pottle	1	6	2	6	0
Kidney.....	100	2	6	5	0	0	Mustd. & Cress, punnet	0	2	0	0	0	0
Beet, Red.....	doz.	1	0	3	0	0	Onions.....	bushel	5	0	7	0	0
Broccoli.....	bundle	1	0	2	0	0	pickling.....	quart	0	4	0	8	0
Brussels Sprouts ½	sieve	2	6	3	6	0	Parsley.....	½ sieve	3	6	5	0	0
Cabbage.....	doz.	1	6	3	0	0	Parsnips.....	doz.	0	9	1	0	0
Capiscums.....	100	0	0	0	0	0	Peas.....	quart	0	0	0	0	0
Carrots.....	bunch	0	5	0	8	0	Potatoes.....	bushel	2	6	4	0	0
Cauliflower.....	doz.	2	0	6	0	0	Radishes doz. bunches	0	9	1	0	0	0
Celery.....	bundle	1	0	2	0	0	Rhubarb.....	bundle	0	6	1	0	0
Cucumbers.....	each	2	0	5	0	0	Savoy.....	doz.	1	0	2	6	0
Endive.....	score	2	6	3	0	0	Sea-kale.....	basket	1	6	3	0	0
Fennel.....	bunch	0	3	0	0	0	Spinach.....	doz.	4	0	6	0	0
Garlic and Shallots, lb.	0	8	0	0	0	0	Tomatoes.....	½ sieve	0	0	0	0	0
Herbs.....	bunch	0	3	0	0	0	Turnips.....	bunch	0	3	0	6	0
Horseradish... bundle	2	6	4	0	0	0	Vegetable Marrows doz.	0	0	0	0	0	0

TO CORRESPONDENTS.

FAILURE OF PEAS (*Pisum sativum*).—Grow them as advised by one of our correspondents last week. In a light soil like yours we grow large crops of Peas by mulching over the roots, and watering with diluted house sewage twice a week, and oftener in dry weather.

WORMS IN CAMELLIA POTS (*Camellia*).—The worms will do little harm so far as directly affecting the roots of the plants is concerned. The chief injury they do arises from making the soil loose about the roots and choking up the drainage, making the soil like a morass. This is the reason the soil in your pots dries so slowly, and when it does it will most likely get as hard as a brick; and when wet it will be as sour as soil taken from a stagnant ditch. Your pots, we presume, are just in the best position for being affected by the lime water, as the bad drainage will keep the water longer in the pot. A shovelful or half a peck of quicklime, and well stirred, will be sufficient for a thirty-six-gallon barrel. You may use more, but the water will be little or no stronger in consequence. Let it stand a day or so till the water is quite clear. If the lime is fresh burned the water will taste sharp if you put a little on your tongue. A good soaking or two will bring most of the worms to the top of the pot, where the poor things will wriggle and die. This plan persevered in will settle the worms, but it will not make the plants healthy, as you would wish to see them, without fresh arranging the drainage, and picking out at least some of the worst soil—the sour and claggy portions of it. In this dull weather we would, unless in extreme cases, be satisfied with doing that, instead of using frequent doses of lime water. When the ball is turned out you could catch many of the worms; and if you sent a small pointed wire through and through the ball the worms would be sure to show themselves, and as this work must be done at any rate we would prefer doing it now, instead of using two or three doses of lime water. In getting rid of the worms and a lot of the sour soil, you may require to place the plants in smaller pots, and use rather light sandy soil, to cause the fresh roots to form freely, and when they are running strongly in the fresh and well-drained soil then you may give a larger shift. The mere killing of the worms with lime water will not make your plants healthy.

MANURE FOR ROSES.—ECONOMICAL FORCING-HOUSE (South Devon).—Good hotbed manure well rotted, or a mixture of horse and cow-dung one year old. Of artificials—superphosphate, and drainings from the dunghill, as the buds thrive. A hipped or span-roofed house will be the best for the purpose, either so narrow as to have a platform on each side and a walk up the middle, or so wide as to have a platform or stage in the middle and narrower platforms on the sides.

PEARS ON THORN STOCKS (H. W. T.).—All the varieties which we know succeed on Thorn Stocks, have already been mentioned by us—viz., Vicar of Winkfield, Louise Bonne of Jersey, Josephine de Malines, Styrian, and Swan's Egg.

WILLIAM'S CONSERVATORY (J. W.).—There is no mistake on our part. It is on page 175 of our last volume, No. 179, August 30th.

PEAR (Tyro).—There is no Pear named Vicar of Wakefield. It is a mistake for Vicar of Winkfield.

COTTAGE GARDENERS' DICTIONARY (Arce).—It is not a new edition, nor does it include any plants introduced during the last seven years.

STINGING PEACH TREES.—SPURS ON APRICOT TREES (C. P.).—You would see in "Doings of the Last Week," that a little softening of the buds by a gentle syringing would be an advantage in dry sunny weather. In damp cloudy weather it is of little consequence. As to the Apricots, the nearer they are to the wall in moderation the better; but we would stay a little until the fruit-buds show more, and then shorten these long spurs, if you can leave enough of buds behind them.

HEATING SMALL GREENHOUSE (Twickenham).—For such a small house (8 feet by 5½) a small cast-iron stove, with flat head for an iron vessel of water, would be much the handiest; or a small brick stove set inside of the house. The next best would be a small furnace outside, say 10 inches wide, 12 inches deep, and 18 inches long, and a small flue, say 5 inches wide inside measure, and 7 inches deep, below the tiled floor. The principle of the Kildanean system is just a strong furnace, with a smoke chimney from it, with damper to regulate it, a chamber all round the furnace, and from this chamber an inlet into the house for the heated air, and a lower opening for cold air to keep up the circulation less or more on the Polmaize principle. Practised men can make any mode of heating answer. In such a small house you need have no difficulty with the chamber, but the furnace must be very secure, or you will be troubled with smoke, &c. The small flue below the floor, supposing the floor to be tiles, &c., would be the neatest for such a narrow house. See what Mr. Fish says of such a house in a late Number. Your *Ipomoea Horsfallii* will not succeed in such a house. I. Learl will do so. We would cut neither down, but you may thin out to one shoot. The plants will require pots of from 13 to 15 inches to bloom well in.

VINES IN BAD CONDITION (A Subscriber).—We think no gardener makes his case better by dwelling on the failings of his predecessors. It is much better to do that which is right yourself, and never mind what your predecessors have done. Your successful efforts at improving the place under your care will shine the more brightly because undertaken unassumingly. Your first objection is to the road dirt or scrapings. We have seen very fine Grapes grown on Vines in that material alone. You removed two spits of road dirt, and it was replaced with equal quantities of turf, good; hotbed manure, little better than poison—one-fourth would have been ample, and that one-fourth more than we like; half-burnt clay, good as far as it goes, but charcoal would have been better; and lastly, 1 cwt. of manure was added—1 cwt. of boiled half-inch bones would have been preferable. We should have formed the border of three-fourths turves 3 inches thick, chopped with a spade, but neither beaten nor made fine, these being taken from a soil neither strong nor very light, but better the latter than the former, the remainder equal parts of boiled half-inch bones and charcoal. This is a compost very suitable for the Vines, and durable. You took off two spits and put on a like quantity; this did not bring the roots nearer the surface. From three to six inches of compost over the roots would have been sufficient, and a covering of hot dung would have attracted them upwards. Your proceeding is making bad as bad as it was before. Your best course would have been to have lifted the roots and brought them to the surface within half a spit, so that they would have been raised about 1½ foot, and be just 6 inches below the surface of the new border. It would have been better to have done it at once, and not delayed it until another year. The Vines can do no good when two spits of the border can be taken off without injuring the roots; and, as you do not start them until April, you would be acting wisely to get your employer's consent to lift them in March, making the drainage good, and a border 20 inches deep. Spread the roots out, and cover them with from 4 to 6 inches of soil. You have cut half the spurs back to see if they will break nearer the rod. If they do not, which is quite likely, your proposed improvement will be necessary. It would have been better to have trained a shoot or cane from the bottom to replace the old rod. Again, the Vines have been kept nearer the glass, but you have had the iron lengthened to a foot or 18 inches. Sixteen inches is a proper distance to have them from the glass. Your painting the Vines is good. We should think the young Vines will be as unfruitful as the old. A little top air at night is desirable, especially when the Grapes are colouring.

WHITE-WASHING A GARDEN WALL (L. B.).—The proposed whitewash would not improve the appearance of your wall. All the good it would do would be to fill up the smaller crevices in the joints and in the face of the bricks, and in this way it would act as a destroyer of moss, and of insects to a certain extent. Its efficacy is increased by adding soot and urine, so as to make it of the consistency of thick paint, applying the mixture with a brush, working it well into every hole and crevice. If it is applied at the temperature of boiling water it would kill many more of the insects' eggs than used cool. Our opinion is that it would not improve the appearance of the wall, but that it would be useful as a destroyer of insects and moss.

PIGEON-HOLES IN CUCUMBER-PIT (Dromio).—It is necessary to have the inner walls of a Cucumber-pit pigeon-holed, so that the heat from the linings may pass into the bed. If the bed is not lined, and Cucumbers are not required early, it is not necessary to have the walls pigeon-holed; but then no linings can be given, and consequently no extra heat afforded when the heat of the bed declines. When the walls are built solid linings placed against them give little heat to the bed.

ROSE SEED SOWING (Idem).—The first week in March is a good time to sow Rose seed. Sow in deep pans, well drained, in a compost of rich sandy loam, and plunge in the open ground. The plants may appear in April or May, but the seeds very often do not vegetate until the spring of the second year.

SCOTCH SNUFF IN PAINT FOR FRUIT TREES (A. B.).—Scotch snuff is simply powdered tobacco, and that is well known to be one of the best insect destroyers. Your mixture of sulphur, lime, soft soap, clay, and soot, is good, but we should have mixed it with tobacco water to the consistency of paint. Scotch snuff being stronger is considered eligible for the purpose. We do not know what properties resin and dragon's blood possess to recommend them for winter-dressing Vines, &c. We never found any benefit from such nostrums, and we must know what they kill before we use them. For these reasons we employ sulphur, lime, soot, and soft soap, along with tobacco water. The first is a powerful antidote against mildew and red spider; lime, a wholesale destroyer of fungi, is useful in destroying the spores of mildew; soot is the best of all antidotes against the attacks of red spider on account of the ammonia it contains; soft soap, because it is a certain destroyer of the Coccus or scale insect family; tobacco, whether in the shape of snuff, tobacco water, or in the leaf, as it is a certain destroyer of the Aphid family; and clay, because it gives consistency, and smothers many insects by forming a coat over them. Clay also prevents the mixture being so easily washed off.

SINGLE CINERARIA (W. L., Eaglescliffe).—No fair opinion can be formed of three single flowers of any Cineraria; the whole plant in flower should be seen. The seedling received has no good properties as a florist's flower, though it may be, as we have no doubt it is, useful, as a decorative plant. The outer bell of colour is very irregular, giving a coarseness to the petals, which are much too long. Compare it with a named variety from Mr. Turner of Slough, or Messrs. Smith of Dulwich, and you will soon detect the imperfections pointed out in your own flower.

FLOWER-BED PLANTING (D. C.).—We presume that the groups are to be cross-planted, and we have no doubt but that they will look well. As you want criticism, we should not like to have the quarter or group on the left side all pink, or nearly so. Thus, of the seven beds you have two *Trentham Rose*, four *Mangleil*, and the long centre bed *Golden Chain*. With the exception of the whitish foliage of *Mangleil*, and the yellow foliage of the *Golden Chain*, the whole colour of the flowers will be pink. What would you say to surrounding your two *Trentham Rose* with *Mangleil*, and then filling the four beds, 2, with brown, purple, or blue? We have just noticed that you propose *Flower of the Day* as a border to *Trentham Rose*—well so be it. Then you could use *Mangleil* on the right-hand side, which we like better than the other side, and you could use *Golden Chain* on the left. Ivy-leaf for No. 7, or *Calceolaria floribunda*. We do not consider that *Alyssum* is good enough for your central bed 7, and you should have a yellow to light up your four beds 6 of *Purple King*. The beds would then stand 7, yellow; 5, 5, scarlet, with *Mangleil*; 6, 6, 6, *Purple King*, with Variegated *Alyssum* sprinkled through it.

OVER-HEATING VINE ROOTS (A Market Gardener).—When we saw your little piece of a leaf, we thought you must either have mildew or thrips, or both. From your account now, we have no doubt you have overheated your Vine roots, and, probably, also the top. We should have liked the shoots to be the length you speak of, after the Vines had been shut up six or seven weeks instead of four. As to the stems outside, we fear you have injured them and the roots much by over-heating. Your hot dung should have been kept away from the stems. Now, you must cool the border, but not over-much expose the stems, and cover them with dry hay or straw. Syringe your house, keep it moist, with a fair amount of air, and remove the covering from the border until the earth is about 70°, and then cover a little. Your processes seem all right, except overdoing the thing. You would see in "Doings of the Last Week," that it was safer to keep heat in by a loose covering, than to use such a mound of hot fermenting matter. The flue, if hot, may have contributed to the mischief, but with a nine-inch wall between it and the border, we lay no great blame on it. We fear the excess of dung has done the mischief, but with care and reducing the heat, we would not yet despair. Are you sure that fresh lime has nothing to do with it? We think the over-heating is the cause. If you lessen the heat and these shoots should be injured, most likely side-shoots will come from the same buds. We shall be glad to know the result, and we are only sorry that the case seems so bad.

ARDISIA CRENULATA CULTURE (Norfolk).—This is anything but hardy. It is a native of the West Indies, and requires a cool stove, or a warm conservatory, in winter, though doing very well in a greenhouse in summer. In some warm places it will thrive out of doors in summer—say for three months after the end of June. Its generic name is derived from *ardis*, a spear-head, in reference to the pointed petals of the flowers. The flowers are small, greenish white, and but little attractive to the eye, but are followed by clusters of berries, which, as they approach maturity, vie with the bright red berries of the Holly for beauty. These give the plants a very pretty appearance, and fine masses will be produced on young plants from a foot to 18 inches in height. The plant grows freely in sandy loam, fibry peat, and leaf mould. The more loam is used, the more compact will the plant be, and the closer will be its rings of berries. It is easiest propagated by the seeds, sown on a hotbed, or in pots on a stage in the hot-house; but, as in the case of the Holly and the Thorn, you must wait a good while for their coming up; but after that you can pot off, and the seedlings will give little trouble. Young shoots, slipped off with a piece of last year's wood, root readily in a pot of sandy soil, inserted in a shady place on a hotbed; and pieces of the root will also grow and send up shoots if placed in a similar position. Cuttings will make the finest and quickest-flowering plants, and seedlings are attended with least trouble. Where two or three plants are grown in a stove, seedlings will often be found springing up in other pots from the dropped seeds. This, and the red berries of the *Kivina humilis*, which also blooms in a small young state, are useful for ornamenting dining-tables. The plant will not thrive if the winter temperature falls below from 45° to 50°. It would like a few degrees above 50° better.

SCALE ON PEAR-SHOOTS (A Reader).—The scale on the Pear-bark and shoots enclosed, which have been twice dressed with Gishurst compound, one dressing at a strength of 12 ozs., and the second at a strength of 16 ozs. to the gallon of water is, we should think, dead. Your tree is the worst infested with the small Pear scale of any that we have seen. If you get rid of the enemy with half a dozen dressings you will do well; but we fear the dressing is only partially applied, or your Gishurst is weaker than ours. A solution of the Gishurst at the rate of 8 ozs. to the gallon, we find quite strong enough for dressing fruit trees. Half the battle in destroying insects is to dislodge them, and this we do by applying the dressing with a brush, working it well in. We find the brushing dislodge a great many, and the wood looks very clean afterwards. It is astonishing what havoc a brushing with water makes with scale insects. The efficacy of any cure depends quite as much on the mode of application as on the destructive character of the mixture applied. A composition applied as a winter dressing should be used at the temperature of 160°, brushing it well into the cracks and crevices of the bark, care being taken not to injure the buds. One thorough application will do more good than half a dozen partial ones.

TEA CULTURE.—A Subscriber would be much obliged by an answer as soon as possible to the following questions. How is the Tea plant best cultivated in India? How soon it comes into produce of leaf for gathering? How long it continues productive? What is the best way of pruning the Tea plant? Ought it to be pruned every year? How many plants on an acre? What is a good average crop off an acre? What is the best work on Tea cultivation? (Inquirer).—If you write to Mr. Smith, Curator, Botanic Gardens, Kew, he will tell you what information you can obtain there. There is "An Essay on the Cultivation and Manufacture of Tea in Java," translated from the Dutch by Dr. Horsfield. If we required the best information on the subject we should apply in India to the Curator of the Saharun-poor Garden.

BREEDING GERANIUMS (A Lover of Flowers).—The two-coloured section of Geraniums you speak of do well out of doors in a warm place and a dry season. In the wet climate you speak of we would not depend on them, as the blooms run, and look watery.

MOISTURE IN AIR OF FARMERY (S. C. O.).—There are many hygrometers which indicate the amount of moisture in the atmosphere. Try Cassella's Garden Hygrometer. Its price is 13s. 6d., and Mr. Cassella lives in Hatton Garden, London.

WINTERING CALADIUMS (J. A. P.).—These are best kept in the pots in a stove seldom below 60° at night. In such a structure, with the pots standing on a damp floor, the roots may be kept safely. The pots will absorb a little moisture from the damp floor, communicate it to the soil, and so prevent the roots becoming farinaceous, and consequently decaying when placed in heat and moist soil. With a soil neither very dry nor wet—one apparently dry yet containing a little moisture in consequence of the pots being placed on a damp floor (or failing such a position, a slight skiff from the syringe at the time of sprinkling the house occasionally, will do as well), and a temperature of 65°, there will be no difficulty in keeping Caladium roots through the winter.

DESTROYING MOSS ON CROQUET GROUND (E.).—Now is the time to do it, for at this season mosses flower or attain their greatest perfection. Whilst the ground is wet or soft, rake it with a long, sharp-toothed rake, working it backwards and forwards sufficiently to bring the moss to the surface, and disturb that remainder considerably. Clear away the moss so brought up, and let the ground alone for a fortnight. Early in March repeat the operation; and about the middle of that month apply a dressing of rich compost, which may consist of any old rubbish well decomposed, adding one-sixth of fresh lime. Mix the lime with the compost a few days prior to spreading it over the ground. A sprinkling of water may be necessary to make the lime fall. Cover it with the compost. Spread this on the ground at the rate of 200 barrowloads per acre, passing it through a three-quarter-inch sieve, to save the trouble of stone-picking. Rake it evenly over the surface with a wooden rake, and, when dry, sow *Festuca ovina*, 6 lbs.; *Festuca duriuscula*, 3 lbs., or 6 lbs. If the grass is to be mown with a machine; *Cynosurus cristatus*, 6 lbs., and *Trifolium repens* and *T. minus*, 3 lbs. each, omitting the last if the ground is of a wet nature. If the situation is shaded by trees sow 3 lbs. of *Poa nemoralis* instead of *Festuca ovina*. The above quantities are sufficient to renovate an acre. After sowing, the ground may be lightly raked, and then well rolled, and twice weekly. If you could spare the use of the ground for a week or two in May, a dressing with rot, in damp weather, would do much towards ridding the lawn of the moss. The cause is a poor soil and damp bottom; the remedy, an improved state of the soil and more herbage. Wood ash is good, also salt; but it takes as much salt to kill moss as it does to destroy grass. Have nothing to do with it. By proceeding as above recommended you will not be able to use the ground so early, but you will be well satisfied with the improvement in the firmness of the lawn.

TRAINING MAURANDYAR—HARDINESS OF AGATHEA CÆLESTIS (A. Subscrib.) *West of Ireland.*—You may cut the Maurandya down to a foot or so high, and it will probably shoot afresh, but we would strike some of the young shoots. They strike readily in sandy soil on a hotbed. When the plant makes fresh shoots stop these when a foot high; this will encourage side-shoots. Train these evenly over the wall, and stop them at every foot of their height if they appear disposed to grow without making side-shoots. If the shoots come too close together thin them out, and any straggling shoots may be cut out, otherwise it is one of the neatest-growing of climbers, very close-habited, and free blooming. It does well in a compost of loam and leaf-mould, either as a greenhouse plant or a half-hardy climber suitable for covering trellises. Train to poles, or plant against any support in sheltered situations in the flower garden during the summer months. *Agatheæ cælestis* is a half-hardy, variegated, bedding plant, and is not hardy, so far as we know, anywhere in the kingdom. We think it would not prove hardy even in the mild climate of Ireland.

STRIKING DAHLIAS (Idem.)—You may place the roots on a gentle hotbed in the beginning of March, and when the shoots are from 3 to 6 inches long take them off with a little of the old root to each, and put them in pots sufficiently large. Return them to the hotbed for a fortnight, harden off, protecting in a frame or greenhouse until the end of May, and then plant out. Your plan of raising from cuttings without any portion of the old root is a good mode of propagating the new and rare sorts, but the plants are usually small, and flower at a later period. They would flower sooner by potting each root in the first instance, and as the shoots appear removing them all but one. This will be very strong, and may be planted out with its flower-buds nearly expanded. We like to plant a good strong plant, and have flowers early. Small plants from cuttings, though late, usually give the best flowers. The main points to be attended to in order to have Dahlias early, is to begin in good time, and to have plants strong and well hardened off prior to planting out. Evergreen Oaks may be increased by layers, but they are best raised by sowing the acorns or seed. March is a good time to sow them.

EDDLERWEISS (M. A. E.).—In answer to our inquiry last week relative to the botanical name for the German title for an alpine plant we have received replies from Lady S., I. Thomas, and A. H. Taylor, all three agreeing that it is *Gnaphalium leontopodium*, and all recommending a little work on alpine plants, published at Munich, entitled, "Die Alpen Pflanz in Deutschlands und der Schweiz." The more modern botanical name of the plant is *Leontopodium helveticum*, and a very good portrait of it is in the "Botanical Magazine," t 1958. Our correspondent "M. A. E." had sown seeds of it, and treated them very judiciously by plunging "the pot in which the seeds are sown under a north wall, beneath the snow, as it is difficult to find any dark place cold enough;" but she wishes for some positive directions. The following is what Mr. Fish says on the subject. "I believe *Leontopodium helveticum* is the same as *L. vulgare*, a native of the mountains of Switzerland and Austria. It is a number of years since I have seen it. I am not now sure, but I think I saw a pot of it among the alpine plants at Drumcondra. I think you could not do better than consult Mr. Donald, of Hampton Court. I recollect seeing a nice little patch of it from 4 to 5 inches in height, with its pretty yellow starlike flowers, in a sheltered place in a rockwork. It stood in a hollow, yet some 4 feet from the ground. It was growing in sandy peat, well drained. The four stones that stood like little cliffs round it had a space left between each, so that there could be no stagnant moisture. In winter some evergreen boughs were stuck round it. No protection whatever would be necessary could we secure snow before frost. I recollect of the plant chiefly as an alpine, grown in a pot half filled with drainage, and set up to the rim among rough clinders in winter, and covered with the glass of a frame. In severe frost, without snow, a little protection would be given to the glass, as in the case of other rare alpine plants. It is propagated by divisions in spring, placed in sandy peat under a hand-light; and seeds may be sown at the same time in a pot half filled with rough drainage, then an inch of flint, and then sandy peat, the upper layer one and within half an inch of the rim. On this scatter the seed, slightly

the seeds are up, then give air and light gradually, and prick off in the usual manner. These, however, are chiefly recollections, and, as stated above, I would advise applying to Mr. Donald as the most likely person to afford information as to this pretty rare plant."

SUMMER TREATMENT OF CYCLAMENS (M. D.).—The Auricula-stand figured in No. 301 would answer admirably for Cyclamens in summer, more especially if the roof were of glass, as you propose. It should be placed so as to have a northern aspect. Tubers, when exposed to the full influence of a hot summer's sun, as yours were, are liable to become blind, or not shoot from the crown, but they usually form a spur at the lower part of the root, on which the leaves and flowers are produced. We have not suffered from mice eating the tubers, nor is it likely, for the fresh roots are bitter, acrid, and burning; but yours, baked as they were, might have become farinaceous, and they are then harmless. Rabbits are still more unlikely to have nibbled them. Dr. Hogg states, in his "Vegetable Kingdom," that "M. de Luca found four grains of the juice, injected into the trachea of a rabbit, caused it to die in convulsions in the course of ten minutes."

FINE-FOLIAGED PLANTS (Liverpool).—All but the first two, which, however, are decidedly ornamental, though not what are called fine-foliaged.

NAMES OF FRUIT (R. A. H.).—*Apples*.—1, Dumelow's Seedling; 2, Golden Russet. *Pears*.—1, Beurré d'Arenberg; 2, Beurré de Rance.

NAMES OF PLANTS (T. A. Subscriber).—Apparently a distorted *Lastrea dilatata*. (*Pentandria*).—1, *Selaginella Galeottii*; 2, *Selaginella Martensii*; 3, *Asplenium flabellifolium*; 4, *Asplenium bulbiferum*. (*Rock*).—1, *Cyrtomium falcatum*; 2, *Lastrea Filix-mas cristata*; 3, *Lastrea indivia* apparently, but there is no fruit; 4, *Nephrolepis tuberosa*; 5, *Oncidium japonicum*; 6, *Pteris scaberula*. Such specimens—tips of fronds—are the worst you could send. (*Filix-mas*).—1, *Geranium Golden Chain*; 2, *Pteris caerulea*; 4, *Pteris hastata*. (*Ignoramus*).—It is a Moss, and one of the Hypnum—we think *H. splendens*. (*W. E. B.*).—1, *Litobrochia vesperitincta*; 2, *Oncidium lucidum*; 3, *Asplenium compressum*; 4, *Nephrolepis tuberosa*; 5, *Asplenium bulbiferum*; 6, *Nephrodium molle corymbiferum*. (*E. J. H.*).—1 and 2, both *Asplenium inaeolatum*. (*Vorboten*).—1, *Pteris tremula*; 2, *Phlebodium areolatum*. The Apple is Lewis's Incomparable.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

JOINT-STOCK POULTRY COMPANY.

To say I entirely agree with your opinion and yet I differ, seems a paradox which I will, however, satisfactorily explain hereafter. I doubt not that, had I not been compelled by circumstances to notice your first leader on the above subject, your subsequent remarks might probably have been equally in harmony with my views. It happens, however, that you have been, and still are, publishing my "Treatise on Poultry-keeping in a Commercial Point of View," which, judging from the number of letters I have received since the publication of your leader, requesting a prospectus with a view to taking shares in the Company, seemingly leads many persons to infer that I am the promoter of the Company alluded to in your article. I beg to inform your readers that I have not the slightest knowledge of that Company or its promoter. It is true that I have had offers from many persons to take shares in a company which I might form under the Limited Liability Act, to carry out my system of poultry-keeping and egg-preserving; but my invariable answer has been, that if a company were promoted by any other party I should be happy to contribute my experience and professional services to the success of the undertaking, but that I could not afford to become its promoter.

Now, what I agree with you in is this:—That were a company formed for poultry-keeping on a large scale according to the prevailing system, it would prove a certain failure, and this for the reasons you so justly point out in your leader; so far, therefore, I quite agree with you, and aware of your great experience and knowledge in all that relates to the advantages Joint-Stock Companies have conferred on the farming interest, by executing drainage works and building homesteads at a rental charge, by letting machinery on hire, by the manufacture of artificial manure, &c., I doubt not that your subsequent remarks on the joint-stock principle applied to poultry-breeding would have been equally identical with my views. In the first place, the Limited Liability Act, which has done more for the prosperity of the country than any preceding Act, although it has in many instances proved a limited and determinate loss to shareholders, has yet been the means of blessing us with the practical use of those admirable inventions which add so much to our comfort, convenience, security, and national prosperity, and which no private persons, however vast their fortunes, could possibly have carried out. In fact, the very essence of Limited Liability is to assist improvements to be practically realised without much individual risk. I have seen too many failures of

most promising undertakings to advise any person to invest his all in any scheme, however promising. Yet I cannot shut my eyes to the advantages that would be conferred on the country by a Joint-Stock Company for poultry-breeding and egg-preserving on scientific principles, or, as some may call it, by artificial means; and taking your statement that we import at the rate of one million of eggs daily, with an increasing consumption, as a basis, there would seemingly be room enough for a score of companies.

I will not enter into details as to how such concerns ought to be managed, but I entirely agree with your concluding remarks, that poultry kept in very large numbers together, and left to roam in all weathers, are subject to disease, which soon spreads, and profit disappears.—Geo. K. GYELIN, C.E.

THE POULTRY CLUB.

LEST any misconception might be placed on silence, I wish to state, in reply to your correspondent "TIMID EXHIBITOR," and to the remarks in your "Letter Box," that it is not the intention of the Stewards of the Poultry Club to enter into any discussion on its merits or constitution through the columns of the press.

The circular sent out to upwards of four hundred exhibitors, with a view to make its objects more generally known, will have informed your correspondent that the "Hon. Secretary will be happy to give information on all subjects connected with the Club;" and I now repeat that all courteous communications will be promptly and fully replied to, but under no circumstances will anonymous letters through the press, or attacks consisting of vague innuendoes, be considered.

The proceedings of the Club will be published from time to time; a list of its members and officers, a statement of its objects, and, after the next general meeting, a copy of its bye-laws, which are now in course of republication, will be at the service of any one applying for them.

It is the wish of the promoters that the Club stand or fall on its merits. Its numbers are daily increasing, and its officers are fully determined that no amount of individual cavilling, *ex parte* statements, or editorial cold water, shall deter them from carrying out what they consider its legitimate ends. I may add that the discountenancing of dealer judges is one of their principal objects, and they see nothing in their list of judges at variance with it.

It was in your columns that this great reform was first publicly advocated, and on that point at least the officers of the Club feel sure of your sympathy.—FRED. WM. ZURHORST, Hon. Sec. (pro. tem.)

NANTWICH POULTRY EXHIBITION.

THIS Exhibition is generally admitted to be the closing show of the season, and, although limited to the immediate locality—viz., a circle of thirteen miles from Nantwich—the competition, in the majority of the classes, is such as would put to the blush many meetings of far higher pretensions. The Nantwich Show is consequently regarded with much interest among poultry amateurs, and never lacks a large number of visitors. Nothing is ever left undone that can tend to the comfort of the birds exhibited, or the pleasure of those persons who may attend the Show, by the gentlemen who officiate on the Nantwich Committee; and the popularity of this Show is also very greatly enhanced by the untiring attention of Mr. Edwin Rhodes, as Hon. Secretary. Quietude, order, and regularity are, therefore, universal throughout the whole proceedings. Some of our most noted breeders of exhibition poultry residing within the limits to which competition is restricted, scarcely any class seems to differ materially from those met with at all other local shows; and the Game fowls raised round Nantwich are noted for being excellent, their reputation in the cockpit being established for a long series of years prior to the institution of our earliest poultry exhibitions. These birds still remain universal favourites in the district; and, consequently, it is by no means uncommon for some of our most noted breeders of Game fowls to canvass this neighbourhood closely in search of specimens for the show-

pen. For birds equal to the requirements of such parties, therefore, a very liberal price is frequently obtained. Such encouragement naturally fosters a spirit of emulation: and hence it is that, year by year, the competition in these classes invariably increases. The variety of Game fowls most esteemed about Nantwich is the Brown Reds. This is easily accounted for from the fact that they are known to be the hardest fighters of all Game fowls.

This neighbourhood is also famous for its strain of Red Pile Game fowls; and yet another breed of very hard-feathered Game cocks are to be commonly met with, exhibited by the Nantwich breeders as Black Reds, but they are far too dark-coloured for show fowls of that feather. They have every appearance, however, of being birds of great power and courage. The Spanish classes at Nantwich were indisputably good. We regretted to see, however, in a highly commended pen, decidedly the best cock shown with all the serrations of the comb frosted completely off, leaving him as useful as before for stock purposes, but ruining him for ever as a show bird. Proprietors of highly-bred Spanish fowls cannot possibly be too careful in giving their best birds due protection from intense cold.

Following the order of the catalogue, Aylesbury Ducks stand next, and a finer collection is rarely met with; the Rouen Ducks were also very good. In *Turkeys* the birds, individually considered, were perfect, but a proper regard to matching, as to feather, seemed disregarded. The class for *Geese* comprised only three pens, a beautifully-feathered pair of Canadians, and two unusually good pens of the Embden variety.

All the *Dorkings* were good, and fit to compete at much larger meetings.

In *Cochins*, Mr. Tudman, of Whitchurch, seems to have absolutely frightened all competition out of the field. That gentleman's well-known birds were shown in excellent condition, and well-merited the prizes they obtained; but we do hope another year to find some enterprising resident amateur or another throwing down the gauntlet to prevent a positive "walk over."

The "Selling class" was good, and several pens changed hands.

The Game fowl classes generally were quite sufficient to sustain the high repute of the district, numbers of the Brown Reds being as close an approach to perfection as could well be supposed. The competition in this variety has been rarely equalled, and a number of these birds speedily changed ownership. We regretted much to see a very excellent pen, and a prizewinner, subjected to the loss of its premium through an improper entry as to ownership. Why cannot men either observe the rules laid down or decline competition? The attempt to thus covertly take prizes is a dangerous experiment in every case, as facts among the non-successful, however carefully concealed, will always ooze out, and subsequent exposure cannot bring with it anything covetable in the retrospect, as regulations must be enforced. The winner of the Nantwich Victuallers' silver cup, for the best Game cockerel, was a splendid specimen of Brown Red, although barely recovered from "dubbing."

The *Hamburghs* were many of them good, whilst the *Polands* were of extreme merit; here, however, as in the *Cochins*, Mr. Heath, with his capital collection of Silver-spangled ones, seems to frighten all rivals away. Some very good Game *Bantams* were shown, both Black Reds and Duckwings. The entries for the "Any other Variety class" were six in number, from four different exhibitors, yet, singularly enough, every pen consisted of Brahmas. They are justly prized about Nantwich as winter layers, for pullets of this variety rarely discontinue laying even should the weather become suddenly severe.

The collection of *Pigeons* was not so large as usual, but embraced many perfect pens. Among the most praiseworthy specimens were some Dun Carriers, an excellent class of Dragons, and Nuns as near perfection as could be hoped for. Among the extras were some very good White Doves and well-conditioned Lahore Pigeons.

The collection of *Singing Birds* was good, and in this portion of the Show was one of the most beautiful specimens of the Skylark ever, perhaps, exhibited.

SINGLE GAME COCKS (Any colour).—First, E. Bowers, Nantwich. Second, T. Burgess, Burleydam. Third, J. Walley, Larden Green. Fourth, H.

Vickers, Wybunbury. Highly Commended, G. Williams, Acton; A. Robinson, Wrenbury. Commended, J. G. Kenyon, Maccles; R. Ashley, Nantwich; J. R. Court.

GAME (Black-breasted Reds).—First, J. Smith, Winsford. Second, A. Phillips, Winsford. *Chickens.*—First, Miller, Wybunbury. Second, J. Heath, Nantwich. Third, J. Grocott, Bunbury. Commended, J. M. Piggett, Stapley; T. Moore; A. Heath, Winsford; G. Williams.

GAME (Brown-breasted Reds).—First, T. Whittingham, Batherton. Second, W. Galley, Nantwich. *Chickens.*—First, T. Burgess, Burleydam. Second, E. Bowers, Nantwich. Third, W. R. Walton, Wybunbury. Highly Commended, T. Edge, Winsford; A. Heath, Winsford.

GAME (Any other variety).—First, R. Ashley, Nantwich. Second, withheld. Commended, R. Roberts, Ravensmoor. *Chickens.*—First, R. Crewe, Burland. Second, J. Pedley, Nantwich.

GAME HENS (Any variety).—First, W. Galley, Nantwich. Second, W. Fisher, Ravensmoor. Highly Commended, J. Thurstfield, Audlem. W. Galley; H. Oakes, Nantwich. Commended, T. Dodd, Broad Lane; J. Dodd, Broad Lane.

BRAHMA POOTRAS.—First, W. Woolley, Bunbury. Second, W. B. Etches, Whitechurch. Commended, J. Heath, Nantwich.

SPANISH.—First, J. Dean, Winsford. Second, R. Hulce, Winsford. Highly Commended, W. Woolley, Bunbury; J. W. Holding, Nantwich. Commended, W. Woolley. *Chickens.*—First, J. Heath, Nantwich. Second, W. B. Etches, Whitechurch. Commended, Miss Hill.

DORKINGS (White).—First, Mrs. Tollemache, Dorfold Hall. Second, J. Platt, Swanlow.

DORKINGS (Any other colour).—First, T. Burgess, Burleydam. Second, Rev. E. Duncombe, Bathomley. *Chickens.*—First, T. Burgess. Second, Mrs. Broughton, Wistaston. Commended, Mrs. Tollemache, Dorfold Hall. **COCHIN-CHINA (Cinnamon, Buff, and Partridge).**—First and Second, E. Tudman, Whitechurch. *Chickens.*—First and Second, E. Tudman. Highly Commended, J. Withinshaw, Jan.

COCHIN-CHINA (Any other colour).—First, J. Dutton, Bunbury. Second, J. Dodd, Minshull Vernon. Highly Commended, G. Williamson, Nantwich. *Chickens.*—First, J. Dodd. Second, G. Williamson. Highly Commended, J. Dutton.

COCHIN-CHINA Cocks (Sweepstake).—Prize, J. Withinshaw, jun., Nantwich.

POLANDS (Any variety).—First and Second, J. Heath, Nantwich. *Chickens.*—First and Second, J. Heath.

HAMBURGERS (Gold or Silver-pencilled).—Third, J. Walwright, Norton. Commended, W. R. Walton, Wybunbury; J. Hornby, Minshull Vernon.

HAMBURGERS (Gold or Silver-spangled).—First, S. Armstrong, Radmore Green. Second, J. Hitchenson, Moulton. Highly Commended, S. Armstrong.

GAME BANTAMS.—First, T. Burgess, Burleydam. Second, W. Griffiths, Nantwich.

BANTAMS (Any other variety).—First, G. Williamson, Nantwich. Second, T. Butler, Middlewich. Commended, J. G. Kenyon, Maccles.

GAME BANTAM Cocks (Sweepstake).—First, T. Marsh, Nantwich. Second, W. Griffiths, Nantwich. Third, T. Stanyer, Nantwich. Highly Commended, W. Griffiths. Commended, T. Stanyer.

GAME COCKERELS.—First and Cup, T. Whittingham, Batherton. Second, W. Galley, Nantwich. Third, P. Judson, Nantwich. Fourth, T. Burgess, Burleydam. Highly Commended, J. Wilkinson, Norbury; H. Oakes, Nantwich. Commended, W. Hope, Nantwich; J. Lewis, Nantwich; W. Clarke, Burland; R. Ashley, Nantwich; A. Heath, Winsford.

TURKEYS (Any colour).—First, J. Edwards, Doddington Mill. Second, Mrs. Tollemache, Dorfold Hall. Highly Commended, T. Burgess, Burleydam.

GERSE (Any colour).—First, Miss Hill, Wistaston. Second, W. Furnival, Norton. Highly Commended, J. Thurstfield, Audlem.

DUCKS (Aylesbury).—First, Mrs. M. Hornby, Swanlow. Second, J. Grocott, Haughton. Third, J. Platt, Swanlow. Highly Commended, R. Cornes, Hurleston. Commended, G. Richards, Whitechurch.

DUCKS (Rouen).—First, J. G. Kenyon, Maccles. Second, T. Burgess, Burleydam. Third, H. Prince, Nantwich.

DUCKS (Any other variety).—First, Master J. Hill, Wistaston. Second, E. Bowers, Nantwich. Highly Commended, Mrs. Bateman, Chorley.

SELLING CLASS.—First, C. Barnett, Blakenhall. Second, W. B. Etches, Whitechurch. Commended, R. Hulce, Winsford; J. Heath, Nantwich.

HEAVY RABBITS.—Prize, S. Davies, Nantwich.

PIGEONS.

CARRIERS.—First and Second, W. Woolley, Bunbury.

DRAGOONS.—First, W. Woolley, Bunbury. Second, W. Cliff, Nantwich. Highly Commended, W. Cliff; W. Woolley.

POWTERS.—First, J. Dutton, Bunbury. Second, J. Withinshaw, Nantwich.

BARBS.—First, W. Woolley, Bunbury. Second, J. Hockenhull, Nantwich.

NUNS.—First and Second, J. Dutton, Bunbury.

TUMBLERS.—First and Second, T. Cawley, Tarporley. Highly Commended, H. Ruscoe, Nantwich; J. Withinshaw, Nantwich.

FANTAILS.—Prize, C. B. Davies, Eardwick Hall.

JACOBIANS.—Prize, J. Hockenhull, Nantwich.

TRUMPETERS.—First, J. Withinshaw, Nantwich. Second, A. Garnett, Nantwich.

OWLS.—First, G. Nixon, Sound. Second, A. Garnett, Nantwich. Highly Commended, W. Ruscoe, Nantwich; G. Nixon, Sound.

TURBITS.—First, Hockenhull, Nantwich. Second, J. Withinshaw, jun.

VARIETIES.—First, J. Dutton, Bunbury. Second, J. Hockenhull.

DOVES.—First, J. Cooper, Nantwich. Second, J. Hockenhull, Nantwich.

Highly Commended, J. Hughes, Audlem; R. Hughes; J. Chesters, Nantwich.

SINGING BIRDS.

CANARIES (Yellow).—First and Second, S. Williamson, Nantwich. Highly Commended, J. Lockett, Nantwich.

CANARIES (Buff).—First and Second, S. Williamson, Nantwich. Highly Commended, H. Prince, Nantwich.

CANARIES (Any other variety).—First, S. Church, Nantwich. Second, Williamson, Nantwich. Highly Commended, H. Prince, Nantwich.

FINCHES (Brown).—First and Second, S. Williamson, Nantwich. Highly Commended, S. T. Silver, Norton; D. Robinson, Nantwich.

GOLDFINCHES.—First, R. Williamson, Nantwich. Second, D. Robinson, Norton. Highly Commended, D. Robinson; S. Williamson.

SKYLARKS.—First, T. Williamson, Nantwich. Second, C. Sutton, Nantwich. Highly Commended, J. Willett, Nantwich; T. Williamson.

BULLFINCHES.—Prize, H. Hope, Nantwich.

The Poultry was judged by Mr. Edward Hewitt, of Sparkbrook, near Birmingham; the Pigeons by Mr. Charles Cotten, of Crewe; and Mr. Charles Voules, of Chester; and the Singing Birds by Mr. John Robinson, of Manchester.

PIGEONS AT THE BRADFORD SHOW.

THE collection of Pigeons was most unusually attractive; nearly two hundred pens, divided into twelve classes, competed, and comprised most of the choicest specimens to be met with. Owing to the severe storm Mr. F. G. Stevens's birds were absent.

The Carrier class was a large one. Mr. Else's first-prize Blacks (which also secured the silver cup for the best pair of Carriers, Powters, or Tumblers), were good, the hen being remarkably fine. Mr. Colley's second-prize pen of Blacks contained a good hen. Messrs. A. Pinto Leite, and Eden received high commendations for extremely good representatives, the Duns shown by both being of special merit.

The Powder class was not particularly strong, with the exception of the prize birds. Lengthy well-shaped Blues were first, and very good Reds second.

Almond Tumblers formed a capital class. Mr. Else's excellent coloured pair were first, and Mr. Ford second, with fine birds.

In Tumblers, Any other Variety, Mr. Eden's wonderful Black Mottles were first, and a beautiful pair of Kites second, Black Mottles, Kites, and Blue Beards, received notice.

Barbs mustered strongly. Mr. Haansbergen added another to his triumphs in this variety with his well-known Blacks. Good Reds were second.

Owls formed a nice collection. Fine Blues were first, and Whites (both Foreign) were second.

In Turbits good Silvers, evenly marked and in capital condition, took both prizes.

Fantails were well represented. The first prize went to Whites, the second to good Blues. Several excellent pens received high commendation.

The Jacobin class was one of the best in the show. Mr. J. T. Lawrence, however, completely outdistanced competition with his extraordinary Yellows, and most deservedly obtained both prizes as well as the silver cup for the best pair, excepting the first four classes previously named. Blacks and Reds were highly commended.

Trumpeters were good, Mr. Robinson's first-prize Black Mottles being particularly noticeable. Mr. Oates had his accustomed position with good Whites.

In Any other Variety the Rev. C. Spencer's beautiful Swiss Pigeons were again first, and Satinettes, second. Blue Runts, Black Spots, Black-headed Nuns, White Dragons, Victorias, and Yellow Magpies, all very choice, received notice.

The Selling Class was large and diversified. A handsome pair of Red Magpies were first, and Blue Dragons second.

BRAHMA POOTRAS AT THE BRADFORD EXHIBITION.

ALLOW me to ask respecting the Brahma Pootra class at the last Bradford show. I see in your journal the awards in the class named, and in the prize and class list sent to me no such class is named. Being an exhibitor in that class, although not at Bradford, I should have been there had I known there was such a class. I shall feel greatly obliged by information respecting it.—J. WRIGHT, Woodbridge, Suffolk.

[We have made inquiries and find that inserting a class for Brahma Pootras was an after-thought, and we have seen a printed schedule, which was sent before the show, with the prizes to be given for Brahma Pootras inserted in MS. by one of the secretaries. When such a change is made a committee had much better advertise the change. It is only fair to the exhibitors, and for the advantage of the Society, besides avoiding unpleasant suspicions of the members of the committee.]

A HOME FOR BIRDS.

CAN any of your readers inform me what I am to do to induce Bullfinches to come and stay in my garden? I have read in the pages of "Cornhill" that if proper arrangements are made to suit the habits of birds, they will come and take up their abode with you. In addition to the Bullfinches, I should like to have a few Thrushes, and Peggy-whitethroats, as occasionally they do pay me a visit. What sort of meat should I provide? Could I make places that suit them to build in, guarding them against the predatory incursions of cats, &c.? I take the precaution now of placing food for them, but the Sparrows take the lion's share. The Sparrow is an impudent bird, he comes occasionally before the Thrush when he is regaling himself, stretches out his neck, and stands bolt upright, as much as to say, I am as big as you. I keep in an old ivy a covey of Sparrows, numbering something like three score; but I should prefer a more melodious note than theirs, if by any means I could induce songsters to stay with me. Probably some of your many readers can suggest a means which, whether successful or not, I shall be glad of.—AMATEUR.

SWARMING VERSUS NON-SWARMING.

"J. E. B." and "A RENFREWSHIRE BEE-KEEPER" have taken up the subject of the advantages derived from swarming and non-swarming hives; and in looking over my notebook for 1864 I find the following facts relative to two hives, the one swarming and the other not, which may be a little interesting to some of your readers.

No. 1 I will name the non-swarming hive, and No. 2 the swarming one.

On the 25th of February I examined my hives, and found No. 1 seemingly dead, but it resuscitated: bees saved, about 1 lb. No. 2 was in good order, about three parts full of comb, and bees about 2½ lbs. Both hives fed, but there was no breeding till the 1st of April. They then continued to make a steady improvement till May 17th, when No. 2 swarmed. The weather getting cold, they remained inactive till July 1st. A second swarm came off No. 2 on May 28th, and it was hived; and both swarms had to be kept alive by feeding till the 1st of July.

Weighed hives on the morning of July 6th. No. 1 weighed 25 lbs. gross; No. 2, 20 lbs. 1st swarm 18 lbs., 2nd swarm 12 lbs. Weighed them again on the evening of the 8th: No. 1 weighed 54 lbs. making the enormous weight of 29 lbs. in three days. No. 2 weighed 22 lbs.; 1st swarm 22 lbs., 2nd swarm 14 lbs. I pass on now to July 29th, when No. 1 weighed upwards of 100 lbs. No. 2, 30 lbs.; 1st swarm, 34 lbs., 2nd swarm 18 lbs. Honey taken from No. 1, First-class honeycomb, 34 lbs.; second-class, 26 lbs.; total, 60 lbs. No honey from No. 2.

August 2nd took them to the heather. The whole of them had by this time come back in weight a few pounds, as is always the case when the honey-gathering ceases.

I pass on to September 13th, when the hives were brought home. I may mention that from August 29th to September 13th they had decreased in weight from 5 to 12 lbs. By this time No. 1 weighed 90 lbs. No. 2 weighed 68 lbs.; 1st swarm 68 lbs., 2nd swarm 48 lbs. Honey taken:—No. 1, 41 lbs. first-class comb. No. 2, 18 lbs.; 1st swarm 18 lbs., 2nd swarm 13 lbs.; total, 49 lbs., leaving three good stocks averaging 45 lbs. gross weight; whereas in No. 1 one stock is left at 50. Total honey taken from No. 1:—July 29th, 60 lbs.; September 13th, 41 lbs.; total, 101 lbs. From the foregoing it will be seen that No. 1 exceeds No. 2 by 52 lbs. of honey, notwithstanding the unfavourable circumstance it was placed in at the beginning, although No. 2 has the advantage of having two stocks more, and their extra weight will in some measure make up for their deficiency of honey.

It will be seen that in some cases the swarming hives have the preference—that is, where there is a long continuance of fine and honey-making weather; but without a remove, and placed in a locality such as ours, in general there is little if anything to be had from swarming hives; and as means are always taken to insure a succession of stocks, no one will for a moment hesitate to say that the depriving system is the best, not to speak of the superior honeycomb. And further, it is to be remarked that there is

little danger of queens getting aged and effect through non-swarming; often are they dethroned in the first year, and seldom do they survive longer than the second, not from age, but because young queens are brought forward and a new princess installed. This can only be proven by taking care every spring or autumn to become acquainted with every queen in the apiary. This every apiarian should do, marking their several appearances so that he may be able to trace them to the end. The oldest queens are always to be found in hives that have swarmed. I have known hives nine years old that never swarmed doing well, although I make it a rule to have combs no older than two seasons. Such a length of time without any casualty occurring proves that queens are dethroned.—A LANARKSHIRE BEE-KEEPER.

BEE-KEEPING IN DEVON.—No. XXII.

A GENIAL DAY—MY LAST GLIMPSE OF FOUL BROOD.

WEDNESDAY, the 8th inst., may certainly be deemed the first spring-like day we have had. Although the sun remained veiled in clouds, the calm western breeze was mild and genial, and the temperature so high that my bees, long close prisoners during the late frosts and more recent rains, availed themselves of it to the fullest extent, filling the air with their most sweet music. Few sights and sounds are more congenial to the eye and ear of the enthusiastic apiarian than those which present themselves on a day like this, and I accordingly spent several hours in my garden delightedly watching, tending, and assisting my little pets to the utmost of my power.

How busy they all appear, and how beautiful are the Ligurians! Beauty is, we are told, only skin deep, but assuredly it is not to be despised. Look for instance at these two hives standing side by side, and compare for one moment the golden, glittering Italians with their modest dark brown, not to say black, British brethren, and declare if it be possible not to concede the *pas* to the brilliant foreigners, whose lithe and agile movements seem to accord so well with the splendour and firefly-like radiancy of their attire.

The first question which intuitively suggests itself to the apiarian is whether pollen is being collected—pollen deemed especially the food of the nurslings, but probably no less essential to adults. Let us watch and wait. We have not long to exercise our patience—there it is, and plenty of it, not carried in in minute quantities by stray individuals, but full loads by several at a time. What is the source from whence it is derived? So far as we can see, the *laurustinus* is the favoured flower; there may be a few loads of snowdrop or crocus pollen, but the *laurustinus* is undoubtedly in the ascendant.

Halloa! whence spring all these yellow-jackets gleaming like crocuses in a garden border among the ordinary black population of the hive? True that in October last I exchanged the black mother of this colony for a yellow queen but I had no idea she would so early have commenced her business in a hive only partially furnished with combs as to produce numbers of young bees by the 7th of February.

Thus much, then, was ascertained by observation of the hives' exteriors. Next came the all-important question of the supply of food. A Salter's balance speedily decided that most stocks were very light, and at this no one need be surprised. Where the multiplication of colonies is pushed to the uttermost we may bid farewell to the honey harvest, and this was so much my case last year that my bees have been dependant upon artificial food for their winter support. In "our Journal" of December 13th I related how I had lost a good stock from the unexampled rapidity with which its artificial supply had become exhausted. This is the only loss I have sustained out of a total of twenty stocks, but having no fancy for its repetition, I at once set to work to take advantage of the fine day by supplementing in the readiest manner the fast dwindling contents of the store cells. And this is the way I accomplished it:—Taking an empty comb, I laid it on its side and slowly poured syrup into it from a jug held some 18 inches above it. When the minute stream, by falling from this height and being directed to all parts of the comb, had filled it on one side as completely as possible, I placed it in an upright position, in which, having been allowed to drain, it was at once substituted for an

empty comb taken from one of the light stocks. This comb having then been filled on one side was substituted in like manner for an empty one in another hive, and the process was continued until the approach of evening put a stop to further proceedings. This plan had the additional advantage of enabling me to ascertain by ocular inspection that none of my colonies was in imminent danger of starvation, since all possessed more or less sealed food. It will readily be understood that I filled the combs on one side only on account of the quantity which would have run out had I inverted them with the view of filling the opposite cells. I could not, however, help smiling as I placed comb after comb in the hives, each weighted on one side to the utmost limits of possibility and perfectly empty on the other, but every one, nevertheless, assuming a position as truly perpendicular as if adjusted by line and plummet, at the correspondent who was so positive that well-made frames when filled with comb always required bottom guides to keep them in an upright position.

I may now be allowed a retrospective and, I hope, a farewell glance at foul brood. It will be remembered that Mr. F. Smith, late President of the Entomological Society, related at the November meeting of that Association, that when he visited my apiary a short time previously he was witness to the re-discovery of foul brood in one of my hives. This notice has produced so many kind inquiries that I am induced to forestall a communication which I intended deferring until the spring, and describe at once what actually occurred. Having shown Mr. Smith the manner in which my Ligurians continued breeding late in the season I opened a black colony formed of two stocks of driven bees, furnished with a few pieces of comb, which had been stimulated by liberal feeding to recommence breeding and comb-building, but which I felt sure had by this time discontinued breeding altogether. Inspection proved this opinion to be correct, but it also showed half-a-dozen foul cells, the first I had met with in my own apiary since the preceding spring, and this was the extent of the mischief, since a rigid examination of every one of my nineteen remaining stocks demonstrated that all were perfectly healthy. The half-dozen foul cells were at once carefully excised and the stock removed to a distance, where it yet remains, and where I shall be very curious to see if the disease will re-appear in the spring. I myself have a strong impression that it will not, since I think that so trifling an inoculation of the fatal virus (the foul cells themselves having been excised) will, in all probability, have become exhausted during the cessation of breeding usual in the winter season. The only way which occurs to me of accounting for the appearance of this disease in a colony composed of the driven inhabitants of two healthy stocks and furnished only with a few pieces of pure comb is by supposing that the hive (a straw one) into which it had been introduced had not been sufficiently purified from the infection left by its previous tenants. As I find from a letter shown me by my friend Mr. S. Bevan Fox that there is still a disposition to connect the appearance of foul brood with the Ligurians, I may be permitted to point out that in this instance the only hive attacked was a pure black one, whilst the Italians escaped perfectly unscathed.

I have to thank Mr. Lowe for his kind compliance with the request I preferred in 1863, and which has resulted in his favouring us with so valuable and interesting an account of his experience of regicidal attacks among bees. I purpose taking an early opportunity of complying with the wish he has privately expressed, by commenting fully and freely on the facts he has recorded and the inferences he has drawn from them, but I cannot permit a week to pass without expressing my regret at the complete failure of his two Ligurian colonies. Both queens I believed at the time to be as good as my apiary could produce, but although I was then perfectly unaware of it I have now unfortunately too much reason to fear that the bees carried with them the taint of foul brood, and judging from my own experience I cannot divest myself of the idea that this fatal malady may have had much to do with the ill-fortune which has pursued them. I have, of course, already tendered to Mr. Lowe my best assistance in repairing his loss, and I can only hope that this assistance will be as frankly accepted as it is freely offered by—A DEVONSHIRE BEE-KEEPER.

OUR LETTER BOX.

POULTRY-KEEPING FROM A COMMERCIAL POINT OF VIEW.—We are requested to say that Mr. Geyelin finds it impossible to continue answering privately the hundreds of questions put to him from all parts of England in reference to poultry-keeping and egg-preserving, as it entails great expense and labour; and as many questions are identical, and require, in order to be answered satisfactorily, an explanation of the laws of nature which govern certain ascertained facts. Mr. G. will arrange the questions under distinct headings, and give the answers collectively in some of our subsequent Numbers. The difficulty of answering satisfactorily to himself by private correspondence will be apparent by a few we subjoin under the head of preserving eggs only. 1. How can you tell when a jar is air-tight? 2. Can you at any period ascertain whether the jars continue air-tight? 3. Are the eggs not affected by the heat whilst packing? 4. Why should eggs be preserved better in rarified air than by merely packing them in air-tight jars? 5. Does it make any difference in preserving eggs when a few days old? Meanwhile we are happy to state that Mr. G. has just discovered a simple and unfailing mode, not only to make the jars air-tight, but also showing at any time whether they remain fully so, or only partially, full particulars of which we will give in a subsequent Number of our Journal.

CANKER IN FOWLS (*Edward Woodcock*).—Scrape out the canker with the nail or a sharp knife and caustic it freely.

BRADFORD POULTRY SHOW.—Mr. J. Stevens, of Macclesfield, informs us that the third prize for Spanish Fowls was taken by a pen belonging to himself and not to J. Stephens, Walsall.

POULTRY SHOWS IN LANCASHIRE.—Can nothing be done to establish a good poultry show in Lancashire, where we have quite as many, if not more, poultry-breeders than any county in England? We have a show at Manchester certainly, but no one who attended the last could call it a good one. Will nothing rouse the energies of all these inert breeders?—GAWZ COCK, Wigan.

TO A TIMID EXHIBITOR.—A word of advice to "A Timid Exhibitor." Go boldly into exhibiting poultry, or, if you keep in that very timid state of mind, you never will be successful. To ease your mind, I will state that I neither breed, exhibit, nor deal in poultry, although I had the honour of representing one of the best yards of poultry in the kingdom, two years back, when I sold all the poultry off that this very timid gentleman seems afraid of.—JOHN DOUGLAS.

POULTRY BOOK (N. H.).—There never was a supplement to "The Poultry-Book." A new edition was commenced by some one, but never completed.

LA FLÈCHE FOWLS (N. B.).—You will find engravings, together with a full description of them, in Vol. iii., pages 244 and 264, Nos. 65 and 66, New Series.

AIR-TIGHT JARS FOR PRESERVING EGGS (A. B.).—Apply to Mr. J. Melville, 20, Galskin Road, South Hackney, London, who is Mr. Geyelin's agent.

PULLEY DYING WITH INTESTINES PROTRUDED (L. B.).—There is no doubt the cause was a difficulty in laying. The bird was, in fact, egg-bound, and, no assistance being at hand, the egg could not be laid without protrusion. The other fowls would eat the egg, under these circumstances, as it would be bloody—a great temptation to them; and they would pick and pull at the protruding membrane, and thereby cause death.

POULTRY-HOUSE FOR COCHINS (W. T.).—All the Cochins prefer sitting on the ground to roosting on a perch. They always crouch in corners; therefore put your perches in the middle of the house. A house 8 feet square will roost a dozen. Three laying-boxes may face the door. Two perches may be in the middle, sheltered from draught, and let the corners be well filled with dry gravel. If you have spare room, give them more, and put them on the perches after they are at rest. They will take to them.

FOOD FOR POULTRY (Poultry).—The best food for all fowls is ground oats, mixed with milk. They, however, always want a change. You should sit their eggs at once. Good barley, well scattered in the grass, scraps of bread, scraps of cooked meat from the kitchen—all these are good food.

WEIGHT OF BRAHMAS (C. L.).—We have known a Brahma cock and hen to weigh 27 lbs. That will not easily be found again. A first-rate Brahma cock should weigh 12 lbs., and a good hen 10 lbs. You will see yours is a good one.

PARROT STAGGERING—HAMBURG COCK'S COMB FALLING OVER (J. L. J.).—Give your Parrot no hemp seed. Feed on bread and milk, and vegetables, such as carrot, &c., raw. If you can get at fresh fruit, give some. Pear is good; failing that, give apple or orange. Protect it carefully from draught. Give Canary seed moderately. You cannot prevent the comb of your Hamburg from falling over except by tying up with silver wire. That is hardly worth doing, as the fault is a disqualifying one, and we fear you will find it hereditary. Frequent lime-whiting, with thick lime, is the best remedy for flies.

INSECTS ON CANARIES (W. A. O.).—Your birds are infested with bird lice. If not very numerous Scotch snuff sprinkled on the parts affected, which are generally under the wings and joints, will eradicate them. There is also a powder sold by most chemists, which is very good, called "Dumont's Insecticide Powder," with full directions for its use. Examine your cages constantly, and change them for fresh ones. Wash the old ones well with soap and warm water, and anoint the crevices and doors with rectified spirits of naphtha, and expose them some days in the air. The vermin come out at night from the crevices and irritate the birds; therefore the latter should be changed in the daytime, as they are then more free from the lice. Give the birds a tepid bath occasionally, and then let them out in a room to dry themselves.

CANARY LOSING ITS FEATHERS (H. W.).—Does the Canary hang in a room in the heat arising from gas burners? or is it over-fat? Either may cause the unnatural moulting. Feed the bird on plain wholesome food, and let it bathe daily. A little flowers of sulphur sprinkled among its seed may be beneficial.—B. P. B.

MILLET (H. H. H.).—The millet used as a bird seed is the seed of *Panicum mllaecum*. Semolina is not a seed, but a coarse kind of wheat meal made in Russia from the finest kinds of wheat.

SWARMING r. STORIFYING.—"J. E. B." would greatly oblige Mr. W. W. Cooke, Town Lane House, Denton, near Manchester, if he would favour him with his address.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	FEBRUARY 21—27, 1865.	Average Temperature near London.			Rain in last 38 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
21	Tu	Daisy flowers	46.8	32.3	39.5	18	4 47	24 45	39 8	after.	25	13 51	52
22	W	Vinca minor flowers.	46.5	32.2	39.3	17	2 7	26 5	28 4	35 1	26	13 43	53
23	Th	Cæsalpinus died, 1603.	47.2	31.8	39.5	13	0 7	27 5	9 5	48 2	27	13 35	54
24	F	St. Matthias.	46.8	32.7	39.8	17	58 6	29 5	46 5	9 4	28	13 26	55
25	S	Alder flowers.	47.4	32.7	40.1	19	56 6	31 5	18 6	31 5	●	13 16	56
26	Sun	SHROVE SUNDAY.	47.3	33.4	40.3	20	54 6	33 5	47 6	54 6	1	13 6	57
27	M	Evelyn died, 1705.	48.0	33.6	40.8	18	52 6	34 5	17 7	17 8	2	12 55	58

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 47.6°, and its night temperature 32.7°. The greatest heat was 62° on the 27th, 1846; and the lowest cold, 18°, on the 24th, 1860. The greatest fall of rain was 0.92 inch.

PEARS ON THE QUINCE STOCK.



LAST year Mr. Rivers kindly gave me twelve Pear trees on the quince stock, and also his "Miniature Fruit Garden," which I found very valuable in aiding me to manage them. The sorts which he sent were—1, Beurré Superfin; 2, Joséphine de Malines (two plants); 3, Doyenné d'Alençon; 4, Beurré Diel; 5, Beurré Hardy; 6, Beurré Defais; 7, Madame Millet; 8, Beurré Beymont; 9, Beurré d'Arenberg; 10, Passe Colmar; 11, Doyenné d'Été; 12, Bergamotte d'Esperen. The above were planted about 2 feet from a south wall, on the 26th of March, and the 9th of April, 1864; and the following is a reliable account of them. 1, 2, 3, were the best, and quite first-rate; 4, was first-rate, but not quite equal to the others; 8 (a great cropper),

and 9, 10, and 11 were all delicious and very good; 5, 6, 7, and 12 either had no blooms or dropped their crop; 7, had an enormous crop, but they were, though covered at night with cloth, frosted at the stem and dropped their fruit. The next lot were in a yard a little in advance of an east-aspect wall—13, Beurré Mauxion; 14, Comte de Lamy; 15, Marie Louise d'Uccle; 16, Duchesse d'Angoulême; 17, Duchesse d'Orléans; 18, Doyenné Gris; 19, Beurré Bachelier.

1, 2, and 3 bore a great crop. All were good Pears; the last was very handsome, delicious, and first-rate; 4, was very large (25 ozs. the three Pears) and handsome, but insipid. In flavour and texture it was the only inferior one. It is probable, that had it been against a south wall it would have been good. 5, dropped its fruit; 6 and 7, had no blooms, or dropped them. I expected to take six fruit per tree. I gathered eighty-two from the thirteen trees.

I should, doubtless, have had more had I not disfruited so largely. I shall in future let Nature disfruit my Pears, as the Pears we leave on, usually the largest, are not the best. They are generally the wormy ones. The trees are nicely furnished with buds for 1865. As examples of abundant blooming I may mention especially, Madame Millet, Doyenné d'Été, Beurré Diel, Beurré d'Arenberg, Beurré Mauxion, Comte de Lamy, Marie Louise d'Uccle, and Beurré Beymont. The last is a fine cropper, very healthy and vigorous, and very delicious. I think it will be placed next year in the first class. These trees, when in flower, put me in mind of Mr. Turner's Modestum Pelargonium. Gentlemen ad-

mired them, and ladies pronounced them "ducks." The "ducks" drank up no end of pump water.

Mr. Rivers wished me this spring to select any of the sorts in his list. I chose another Beurré Superfin, and three that I did not possess—viz., Beurré Giffard, Beurré de Rance, and Thompson's. With this lot he was so good as to send me, with six duplicates of sorts sent last year, the following (making thirty-two trees), of his own selection, hereafter to be reported on. I suppose they are good, for he says, "I will make you as great in Pears as you are in Roses." That may be easily done! The sorts sent were these—Bezi d'Esperen, Beurré d'Amanlis, Louise Bonne of Jersey, Comte de Flandres, Fondante d'Automne, Winter Nelis, Baronne de Mello, Williams's Bon Chrétien, Aglaé Grégoire, Vineuse, Beurré Sterckmans, Prince Albert, Fondante de Mars, Peach Pear, Dr. Trousseau, Glou Morceau, Napoléon, Albertine, St. Michel Archange, Avocat Nelis, and Iris Grégoire. The last three Mr. Rivers says are new, and believed to be good. Thompson's and Beurré de Rance require to be double worked, and were so sent.

I do not send this article to instruct old hands, who have forgotten more than I know, but to encourage others, who, like myself, are young in Pear-growing. To such I say, Buy these, they are, indeed, first-rate—1, 2, 3, 4, and 15, Winter Nelis, Beurré de Rance, and Marie Louise. If more are wanted add 13, 14, 8, 9, 10, 11, and 7, which last, though not yet proven here, is known to be first-rate; 11, is the best early Pear (July).

With regard to Pears on the quince stock, I must make some observations. They require a light soil and cool subsoil. If land is strong it must be made light. They require biennial removal, if the garden is small, not otherwise, renewal of the soil, and root-pruning. They also require to be planted up to but not above the point of union. The soil should not touch the junction of the bud with the stock, or the budded part will root into the soil and destroy the effect of the stock, which should not be. If they are grafted high, earth should be raised like a mole-hill to the point of union. They require pinching rather than pruning. I keep mine like shrubby Calceolarias, with their shoots pinched to three leaves in July. If large pyramids are required, the leader, of course, must be allowed to go up. If the pyramids are too large to be removed biennially, they may be root-pruned *in loco*, in a radius of 18 or 36 inches, according to the bulk and height of the tree. Root-pruning is not sufficiently practised.

Young Peach trees would come into bearing sooner if they were cut less at their heads and more at their roots. People plant and treat things wrongly, and then cry out lustily, "It is all humbug." They bury rather than plant trees, and "stick and dab" them in; but Nature never was a sexton or a bricklayer. Both are wrong; the first, because the roots are too far removed from the action of the sun and atmosphere; the last, because the roots cannot run in concrete. Nature casts her seeds on the ground, hence the trees have abundant surface roots. It is better to plant shallow, and mulch and water in burning

summers, than to bury the plant to obviate burning and to save watering. The tap roots may produce wood, oftentimes too strong; but radial roots produce and bring to perfection fruits and flowers.

Let Pears on the quince stock be propagated low, for they must be earthed-up to the point of union. Remember the following maxims:—"Nature never was a sexton or a brick-layer." "Nature loves sun and water in the same ratio." "What you take out of the ground you must replace, unless the ground is redundantly stored." "It is better to follow and assist Nature, than to thwart and retard her."—W. F. RADCLIFFE, *Tarrant Rushton, Blandford.*

THE MODERN PEACH-PRUNER.

No. 4.

SOILS AND MANURES.

THE particular kinds of soil which are adapted for Peach-culture must now be considered. A more important consideration cannot well occupy the attention of the growers of all stone fruit. The subject is a large and difficult one, and is far from well understood. It is not pretended, therefore, to give more than an outline of certain established truths, which, it is hoped, will induce cultivators to examine more carefully the nature of the soil composing their gardens, so as in some measure to secure materials now known to be indispensable in Peach-culture.

There are three principal earths which enter, more or less largely, into the composition of all soils; these are clay, siliceous, and lime. Soils are made by a complex combination of materials obtained from these three primitive earths. These materials vary considerably in their proportions, and so affect the general nature of the soil, which, moreover, depends very much on the quality of the subsoil. For example: a chalky subsoil gives a whitish appearance to the surface soil; when red sandstone constitutes the subsoil the earth above it has a reddish hue; on gravel it has a yellow tinge, and on blue clay it appears greyish.

Clay is a constituent of all good soils; in fertile ones there may be 15 per cent.; but in those which are barren 40 per cent. Its absence makes a soil too dry, while too much of it constitutes a soil retentive of moisture, and apt to harden and crack with heat. The rays of the sun cannot penetrate stiff clays. The red clay soils are the hardest, and the black clay the most plastic. The purest clay contains at least 60 per cent. of sand, and is always mixed with mineral and other substances. Clay soils, properly treated, are among the very best for stone fruit. The first consideration is to drain them thoroughly of superabundant water, which would otherwise result in soft, spongy wood, and moss on the trees. The next thing is to incorporate with them all such materials as will render them permeable by the air. This should be done to the depth of at least 2 feet, by means of steel forks, using for this purpose such materials as sand, coal ashes, gravel, lime from very old buildings (of this a large proportion), broken pottery, pounded oyster-shells, &c.; in fact, anything to keep the soil open. The general border-drainage of such soils should be itself 12 or more inches in depth, according to the quality of the clay. Drainage withdraws the water from the roots, and allows the air and sun's heat to reach them and supply that warmth which is absolutely required for carrying on their functions.

A main drain, at least 4 feet deep, running under the walks, and connected with this border at intervals, is requisite, unless in the case of stony subsoils. It is hardly known how much drainage, well carried out, increases the temperature of the borders. Whatever tends to increase the temperature of the soil in naturally cold and damp countries is of the highest importance. Continental writers are not so explicit on this point, but possibly the amount of evaporation lessens the danger. Of late years this subject has gained ground even among them.

Siliceous, or sand, is found more or less in all soils. Sands vary much in colour. Sand more unequally reduced forms gravel; when flinty, it is termed silicious; with mica, micaceous; when very fine, dust. Silica allows water to evaporate from it twice as fast as chalk, and three times as fast as clay. Sandy soils are early, and wrought easily, but are incapable of great production. They are, however,

soils," and in them manures soon disappear: these should, therefore, be applied only for the crop of the current year. Silicious soils vary in colour from white to red, according to the quantity of oxide of iron which they contain. They are friable and penetrable to a great extent by the air, but liable to dry up. There are, however, exceptions to this general rule. In some parts of the eastern counties of England there are large tracts of land composed of calcareous sand. These soils are apt to become binding rather than dry on the surface, and as such they are more fertile than loosely-constituted silicious soils. Usually loose sandy districts are very unfertile when planted with fruit trees, especially Peach trees. Such soils should be mixed largely with stiff alluvial loam, and have rich surface dressings and mulchings in times of drought. Soils thus treated are much improved, but whilst the Peach grows fairly in them the fruits, though of good flavour, are not large. In order to supply carbonate of lime freely, powdered lime rubbish and gravel mixed (so as to separate the particles), the whole spread over the surface, would gradually find its way by the infiltration of water all through the soil. Thus only could a silicious earth, rendered firm by clay with lime added, be called a fair Peach soil. Pure siliceous is extremely barren. When, however, it appears of a reddish colour it indicates the presence of oxide of iron, which combines readily with the oxygen of the atmosphere and retains it. These ferruginous soils are excellent. When siliceous is in too great a quantity there is an abundance of blossom, but the fruits are not so large as in other cases. The leaves of the trees are also more liable to curl and the attacks of aphides.

The third chief earth found in soils is lime. The value of lime in the culture of the Peach, the Vine, and indeed of all fruit trees, has not yet been fairly estimated. Lime appears in soils in the form of carbonate of lime, or chalk. Without the admixture of other substances essentially chalky soils are very unfertile. A chalky subsoil is unfavourable to fruit culture. Calcareous soils absorb moisture, and dry up with equal rapidity. Calcareous matter is, however, of the highest necessity in Peach-culture. Its absence is at once perceived by the falling of the fruit at the period of stoning, because carbonate of lime constitutes a considerable portion of the stone. Sand and clay are the appropriate ingredients to mix with chalky soils, so as to render them more firm, yet permeable and fertile. Clay destroys the whiteness of the chalk, which is unfavourable to the due absorption of the sun's rays. An incident strongly corroborative of what has been advanced respecting the value of lime, occurred lately at Sawbridgeworth. The soil of that nursery is very largely mixed up with comminuted chalk; the water is therefore impregnated largely with carbonate of lime, and its effects on Peach trees and Vines in pots have this year been remarkable. The trees and Vines were copiously watered, and a thick deposit of lime was found adhering to the drainage. The roots were finely developed, while vigorous and healthy growth was visible everywhere. Other experiments have fully established the value of lime.

The border for Peach trees should always have a good slope. Its width, for walls 10 feet high, should be about 5 feet, provided this space is never encroached on. A rich calcareous loam, of an unctuous texture, soft to the touch, made pervious to air and heat, is a favourable soil for the Peach. Manures should be gradually forked in, but the roots should be so near the surface that forking 3 inches deep would be dangerous. These Peach-borders should not be further disturbed save for weeding. Although thus near the surface, roots can be readily protected from the effects of evaporation during the summer by mulchings of litter, and, in the same way, from excessive cold.

Calcareous matter (old lime rubbish, powdered oyster-shells, and broken bones), should be added to the extent of one-sixth of the soil. Manures composed of well-rotted vegetable refuse, intermixed with stable-droppings, allowed to stand for some time before using, and well turned fortnightly, with lime and soot intermixed, are excellent. Summer mulching should not be applied till the earth has been well warmed by the sun. Charred earth soaked in manure water is highly stimulating, but should be carefully used.

Although the list of manures is long, many Peach-growers are of opinion that such as are of slow decomposition, as old woollen materials, are the best; at any rate, vegetable manures are of much value, and are too often neglected.

These, when applied, should not be buried too deep, otherwise fermentation is hindered. Wood ashes offer much that is valuable. The ashes of all vegetable substances contain lime, phosphoric acid, and alkaline salts. There is usually a little charcoal or carbon left which is most valuable. These ashes should be applied when newly burned. The effects of manures, however, much depend on the quality of the soil to which they are applied, and on its state at the time of application. Manures should be thoroughly incorporated with the soil.

In the case of orchard-houses a well-drained locality is absolutely indispensable. Many failures occur from neglecting to examine into the nature of the subsoil on which the building is to stand. Mr. Rivers has so often insisted on this point that it is surprising it is not better understood. Any situation almost is preferable to a cold ill-drained one. It must be evident that no Peach-blossoms can set in such houses, shut up as they may also happen to be at that season. The manures required for orchard-house trees are naturally of rather a more stimulating character than for trees in the open air. Thus, rich surface-dressings often renewed are required. Liquid manures and weak guano water, alternately each week in the summer season, are beneficial applications. This chapter, then, can only be considered as suggestive, and as such only is it offered.—T. C. BRÉHAUT, *Richmond House, Guernsey.*

ROYAL HORTICULTURAL SOCIETY.

ANNUAL MEETING.

THE Annual General Meeting of the Fellows of the Royal Horticultural Society was held on Tuesday, February 14th, at South Kensington. Lord Henry Gordon Lennox, M.P., presided. The attendance was not large.

The minutes of the last meeting of the Council were first read by the ex-Assistant Secretary (Mr. Murray), and confirmed.

Mr. Edmonds and Mr. Fortune were next appointed scrutineers to examine the voting-papers for the election of the Council and officers for the ensuing year.

Mr. A. WESWON moved that the resignation which Mr. S. H. Godson had sent in to the President (the Duke of Buccleuch), of his seat at the Council-table be not accepted.

MAJOR PHIBBS seconded the motion.

Mr. THRING desired an explanation from Mr. Godson of his reasons for resigning.

Mr. Godson replied that he explained his reasons in the letter conveying his resignation to the President—namely, that he had been refused an examination of the accounts of the Society, in consequence of which he felt that he could no longer sit upon the Council with satisfaction to himself, or with justice to the interests of the Society. It had been alleged that the particular account he wished to see was a private account; but how stood the matter? He said in his letter that a statement was made before the Council by which a balance was shown to be against the Society, and it was not satisfactory. He accordingly proposed that a sum of £1000 should be taken up on loan from the bank until the accounts were investigated by the Council, and that a satisfactory account be given by the next meeting; and the consequence was that that sum of £1000 was borrowed, and the matter stood for the next meeting. At the next meeting an account was produced, stating that £6772 or thereabouts of the life compositions, which had been simply held up to that time as a guarantee, should be realised. At the same meeting it was ordered that £3000 or £4000 of that money should be applied to the general purposes of the Society; and therefore he the next morning called at the offices of the Society, and asked Mr. Murray for a sight of the accounts; but Mr. Murray declined to afford him the sight, and accordingly he brought the matter under the notice of the Council at their next meeting. It was, however, answered by Mr. Murray and Mr. Cole that Mr. Murray had no authority to produce the account, as it was a private matter of Mr. Cole's. The Treasurer was the person to produce the statement of accounts, but he refused. He said, "You are the opposition." He (Mr. Godson) answered, "Well, I can't help that;" and upon reflection he thought that if an inspection of the accounts was to be

refused to a member of the Council he could not retain his position. Therefore, he wrote to the President of the Society, sending in his resignation; and he had received in reply a very handsome letter, wherein his Grace said he regretted the Council would lose the benefit of his services, but still more that there should be anything to induce him to withdraw from it. He (Mr. Godson) having resigned, could not of course attend any more meetings of the Council; but came up at the last meeting, and told the gentlemen present that it was monstrous to expect any one to concur in the sanction of the accounts, which the Council necessarily had to do, unless they were free to examine them at any time [hear, hear]. It was extremely unpleasant to be at variance with either the members of the Council or any of their officers on any point, but much more upon a matter of this kind. Everything he had stated had been verified by the accounts to be placed before the meeting that day. Not only was what he had stated verified, but matters were much worse than he had represented them, thus proving that he did not resign his position at the Board without sufficient grounds. He could only say, seeing that a motion was before the meeting to retain his services on the Board, that if he went in armed with the support of the meeting, his position would be very different, and very much more dignified and pleasant than what it had been. If it was their pleasure that he should continue to act on the Board, of course he should feel it his duty to comply, and, moreover, he should feel it his bounden duty to watch closely their interests.

Mr. THRING said Mr. Godson had not answered his question, whether or not he resigned willingly; for he (Mr. Thring) did not think this was the way for Mr. Godson or any other gentleman in the Council to treat the Society. If Mr. Godson felt himself aggrieved it was not his duty surely to resign, still less to come there and attempt to force an expression of approval of the course which he had pursued. No one regretted more than he (Mr. Thring) did losing the services of Mr. Godson, for he really believed that he attended most carefully to the interests of the Society, and was a most valuable member of the Council; but, on the other hand, when a gentleman chose to resign his seat at the Board because he was not satisfied with the proceedings of that Council, he (Mr. Thring) said that was not a proper mode of dealing with the Council or with the Society, for the business of any society carried on in that way could not possibly redound to prosperity or harmony. Look at the clubs of London, how were their members to hope to get on with a man who on the slightest pretext chose to send in his resignation, trusting to the members to throw it back? If a man in a club was beaten by a majority, it was surely not the right course to pursue to retire. If his conviction remained unshaken, though beaten by a majority, it was his duty to remain, and try with the assistance of time and reason to convince others. If he was persuaded there was something wrong, it was his duty to remain and endeavour to put it right. If he suspected fraud, he should certainly not retire and leave the fraudulent to go on perpetrating their nefarious practices, but should rather persevere in his efforts to expose the fraud, and in the event of succeeding then to propose that the delinquents be turned out by a vote of censure or otherwise. He (Mr. Thring) never yet belonged to a society in which a member threw up his connection at the very moment he was wanted, and came saying, "Give me the *éclat*, the glory, and force me back on the Council." That was what Mr. Godson had done, and he (Mr. Thring) thought he had committed an error of judgment. He therefore asked the meeting to accept Mr. Godson's resignation.

Mr. CLUTTON observed that as he had been referred to by Mr. Godson it was necessary for him to say a few words on this matter. Sir Daniel Cooper was the Treasurer, but as he had gone to Australia, the Council did him (Mr. Clutton) the honour of placing him in Sir D. Cooper's position. As an ordinary member he held, and as a member of the Council he had always held, that every member of the Council was just as responsible as the Treasurer for the correctness of the accounts. He had just as much right as the Treasurer to come and look at the accounts; he (Mr. Clutton) went further and said, it was his duty to do so. The Treasurer was merely the custodian of the money, paying cheques, or otherwise, according to the orders of the Council. The bye-

laws, indeed, specified that he could not make any payments whatever, save the salaries, excepting by the orders of the Council. If, therefore, Mr. Godson thought it his duty to withdraw himself from the examination of the accounts, with which he was very familiar, he (Mr. Clutton) must say it was entirely his own act. At a certain meeting, no doubt, a paper was produced, but it was a mere private paper of Mr. Cole's. He (Mr. Clutton) was at that meeting, and he simply looked at the paper, but not as a paper coming from the Treasurer; for it did not do so at all, it was a mere estimate of what was likely to be the result of the year's transactions. The accounts were not then made up, and it was some months before they were due. As to Mr. Godson's being refused a view of the accounts, nothing of the sort took place, because they were as much open to Mr. Godson as to himself or any other member of the Council: therefore, he said, Mr. Godson was wrong in withdrawing from the Council on that ground.

Mr. COLE: Mr. Godson mentions my name under some kind of hallucination on the subject. It is quite true I ventured to make an estimate on my own responsibility as an individual member of the Council. I am not careful of my papers; I leave them about, and on this occasion, it appears, I did so. I was so indifferent to the matter that had Mr. Godson asked to see the paper, although it was my own private memorandum, I should have had no hesitation in complying with his request. It was left on the table, and that day or next day Mr. Godson, it seems, expressed a wish to have a copy of it. I was not consulted in the matter; I did not even know that he had made any such application, otherwise I should have at once said, "By all means have it; get all the good you can out of it." But Mr. Murray felt himself warranted in refusing a copy: consequently the Fellows of the Society will see that it is not quite correct for any gentleman to say he was refused a sight of the accounts. I do not recollect precisely what this was; it may have been an estimate, and a very wrong one; but as to my having any objection, I had not the slightest, nor have I at this moment. However, it had really nothing to do with the accounts. The accounts are all open to Mr. Godson, who takes a great interest in them.

The CHAIRMAN put the motion and amendment to the meeting. For the former there were only 10 hands held up; for the latter 21. Mr. Godson's resignation was, therefore, accepted.

The SECRETARY then read the Report of the Council for the past year, and a printed copy of the accounts having been distributed to the members, they were taken as read.

A Member then begged to move the adoption of the Report, which, he said, proved that the science of horticulture was not neglected by the Council, whilst the comfort of the visitors to the gardens had their anxious attention. It was a very gratifying Report, and in no feature more so than in that where it was stated, that arrangements were being made with the Society of Arts for adding an examination in gardening to the examinations which they conduct throughout the United Kingdom, with the view of improving the education of gardeners. There were great facilities connected with this Society for effecting such an object, and it was very well known that the old Chiswick Gardens were a very good school for gardeners. He then made some remarks on the arcades provided in the Kensington Garden, and on behalf of the ladies thanked the Council for providing them. Some of them, he had noticed, were glazed at the back, and filled with plants, which added very much to their picturesque effect. He, therefore, hoped to see this principle carried out to a greater extent.

Major-General Sir A. SCOTT WAUGH seconded the motion.

Mr. A. F. GODSON rose to move an amendment:—"That a Committee, to consist of five members with power to add to their number, be appointed to investigate the affairs of the Royal Horticultural Society, and to report at the earliest opportunity—1, What is the true financial state of the society; and what are the circumstances under which the hitherto enormous expenditure has been incurred? 2, What measures should be adopted to save, if possible, the Society from impending insolvency? And that for these purposes a balance-sheet of 1864-5 be referred to such Committee." Mr. A. F. Godson said he did not attempt to urge one point against the Report but simply with regard to the

accounts, therefore it was useless for him to say anything in reference to it: besides, no one had seen the Report, and therefore no one could be expected to make much remark upon it. With regard, however, to the accounts he had to say a great deal. First of all he wished to draw attention to the balance of 1863, £1433 5s. 5d., and to the liabilities of 1863, paid off £933. Now they had allowed £500 for sculpture, which became due in 1863, and remained over to this year. They would find that £500 was taken credit for as against 1863. That might be the way of doing business in this Society, but it was not the usual way. With regard to the second item, £424, on the transfer of life compositions, he compared the course taken by the Council with the fable of killing the goose that laid golden eggs. The life composition fund, producing £400 a-year, had been killed, and therefore they would never see that again. The £2260, receipts for admissions and subscriptions, in 1862 amounted to £8600, and last year were £8400. The annual subscriptions were now £7300, whereas in 1863 they amounted to £7700. There had been a loss of £900 on the exhibitions, while the Royal Botanic Society had cleared £2000 by their shows. He also drew attention to £5 18s. for odours and perfumes of flowers, and asserted that the maintenance of the Society cost £40 a-day, which he considered altogether unwarrantable. The Journal of the Society cost £300, and yet he looked upon it as completely valueless—as rubbish in fact, for all it contained was correspondence and preliminary puffs. The Arboricultural and Floral Committees had cost in one year (1862), £300, but instead of assisting horticulture the Council did the reverse. With regard to the handbook, against which there was a liability of £50, he wished to know who had ever seen it. A few dozens, he believed, had been printed, but they were of no earthly use; and he must really ask whether they were to go on throwing away £50 here and there upon things which were utterly worthless. The *conversazione*, over which something like £330 was spent, had been the laughing-stock of everybody. He wanted to know what it had to do with horticulture. Certainly it afforded an opportunity to a number of nobodies to turn out very grand and show as if they were somebody and something. Last year, he drew attention to the word "rent" not being named in the accounts, when there was £2300 due to the Commissioners of 1851 under that head, and there was now £4700 due. The word "rent" was now inserted, and although when he complained of the word not being there, he was told no rent was paid, he was told now that it only amounted to the magnificent sum of 4s., yet there was £800 put down for rent, rates, and taxes in respect to Kensington alone. With regard to the payment of interest on debentures, the Charter stated that, first of all, the expenses of the gardens should be paid, then the interest on debentures, after that the debt due to the Commissioners. Now, he begged to tell them, that had the expenses of the gardens been paid, not a single farthing would have been available for the debentures, much less the liquidation of the Commissioners' debt. But that would not do: the Council actually violated the Charter by paying the interest on debentures before the cost of maintaining the gardens. What chance, he should like to know, had the debenture-holders of getting anything next year? Coming to the revenue, the whole amount realised was about £14,000; but £20,000 had to be expended. He was a young man and had a great deal to learn, but he imagined that that was not the right road to prosperity. Last year £17,400 was spent, but they managed to meet it, which was very far from the case this year. He had drawn attention on a previous occasion to the manner of keeping the accounts, the heading, "liabilities and assets," having been omitted, and he was told that they should be better kept, but he saw no improvement. The bye-laws said that a true account of the state of the Society shall be rendered at the Annual Meeting, but this was not a true account. In the year 1861, there was an account of the assets and liabilities, which showed clearly what they owed. That was changed next year to profit and loss account, but last year there being a great deficit it was left out, and this year the state of things was worse; so it would not do to put it in. There was a balance in 1861, according to the accounts, of £10,000 in their favour. Now, however, what with rent and £3546 liabilities this year and other things, £20,000 had disappeared in four years. The

waste was accounted for by such things as those garden improvements which had cost £2500 this year, and which were no improvements at all; they, perhaps, might have been had they been done at the Brompton Cemetery. Now he came to a matter which really was shameful. He became a life-composition member on the guarantee of what he imagined was an honest and honourable Society; but now he had nothing to look back to, for, owing to the bankrupt state of the Society, subscribers would withdraw. The debenture-holders, too, had very small prospect indeed; and all he could say was, that it was utterly hopeless for them ever to expect anything unless a committee of investigation was granted. It was a gross breach of the Charter taking the money of the life-compositions for bear's grease shows and to build up a number of rubbishy things which were no better than skittle-alleys and bowling-greens. There was such an overwhelming majority for the South Kensington Museum on the Council that he could not hope for any redress in behalf of horticulture. But whether he obtained his point or not he cared not; he should endeavour to put the Society in a straightforward course. Now he would say one word with regard to the future. They would this year have to start with a deficit of £4000, and the income would most probably be less than it had been last year. Of course, the Council considered they had a brilliant prospect for the future; indeed he never knew when they had not a brilliant prospect, but they had never yet realised it. Suppose they had an income of £13,000, out of that they owed £3000, leaving them £10,000. The necessary outgoings, independent of the rent, would amount to £5000; thus £5000 was left to defray the expenditure, which expenditure in 1863 was £19,000, and last year £20,000. Deducting the outgoings of which he had spoken, there was £15,000 left without a farthing to meet the deficiency.

Mr. A. WESTON.—Without agreeing in every respect with what has been said, may I be permitted, before seconding the resolution, to give my opinion on some points, which opinion is shared by a considerable body, if not by a large majority, of the Fellows of this Society? Setting aside the eligibility of the site for horticultural purposes, I would call your attention to the position of the gardens, and to the fact that at the present time (except upon sufferance), we have but one access to them—the two side entrances being the property of the Commissioners of the Exhibition of 1851, who can at any time take possession of them for building or other purposes by giving three or six months' notice to that effect. I do not presume to offer an opinion as to the management of the gardens, but cannot conceive how the science of horticulture can be promoted by the exhibition of soap and scents in the conservatory, or the performance of Mumbo Jumbo in the arcades. Such sights are more worthy of the Crystal Palace and Cremorne; and we have already lost the services of more than one able professor, who felt that they could not conscientiously approve of the Horticultural Society being made subservient to other interests. I shall say little of finance. I believe we are very considerably in debt, and the number of Fellows is decreasing. Under these circumstances I think the Council were hardly justified in giving £1800 for the great unsightly tent whose bare poles are now such an eyesore to the neighbourhood. The greatest calamity that has happened to the Horticultural Society has been its amalgamation with, or rather its absorption by, another body. Public opinion has spoken loudly through the press on these subjects; but nothing can be done till we free ourselves from the influence of the small knot of individuals, the self-styled patrons of the arts and sciences, who are sacrificing our property and destroying our Society.

Mr. COLLS rose to reply. I shall confine myself, he said, to the correction of a few mistakes Mr. Godson has fallen into. He commenced by upbraiding us with carrying over £500 for sculpture, which is still a debt. Now the sculptor (Mr. —) had a commission—he has not executed it, and therefore has not been paid. Mr. Godson, in commenting on the accounts, said that the daily admissions had fallen off. Now I find that the daily admissions for the year 1863, as distinguished from the exhibition receipts, were £134; this year, excluding the Rhododendron Show which is put amongst them, they amount to nearly £700. We had the misfortune last year of not receiving so much as we usually

did for exhibitions. Two of the days, as will be in the recollection of members, were extremely unfavourable as regards the weather, and such as to deter the public from coming out. That was a piece of ill luck which was the great cause of the decline of the exhibitions at Chiswick; and I am afraid this dependance upon the weather is one which can hardly be cured, except by the course the Council has taken—that is, of having places under cover. We have now provided places under cover of various temperatures, where plants are well exhibited, and to a great extent we are independent now of the elements. We were not, however, last year provided in this respect to the same extent as now. And then Mr. Godson coupled his observation by an extremely courteous remark, or, rather, I should say, a comparison between ourselves and another society. He asserted, to my great astonishment, that whilst we had lost, that Society had gained £2000. I am afraid this is one of his usual dreams. If he will consult the accounts of that Society he will see they have had apparently a surplus of £900; but they have never charged themselves, and never do until the following year, with the extra expenses of those exhibitions. Therefore it is impossible to say at this moment whether the exhibitions of that Society were or were not paying; but we have the published fact that in the previous year they lost £500. Then Mr. Godson flies into this curious mistake: he goes into an estimate of what he calls a loss on the perfume exhibition, and he estimates that we lost £10 daily, and our working expenses are £10 daily. That is one of those odd mistakes people will fall into. It is certainly quite true that these Gardens cost £3000 a-year to keep them in order, and you may, if you like, say it costs us £10 a-day. The working expenses of the Gardens upon ordinary occasions go on whether or not. You must have your door-keepers, your superintendent, your man at the engine, and so on; but Mr. Godson does not seem to be aware, whether we take 1s. or £100 a-day, the expenses must go on. As to his remarks about the Journal, it is a matter of taste whether or not it conveys information. Then he tells us that we are spending £20,000 a-year, and next year shall have only £5000 to meet it. Now he has made a misstatement of the expenditure of last year. The current working expenses of last year were less than the year before; nevertheless our outlay last year was very large, as is well known to the members of the Society. They will recollect that at the last annual meeting it was stated that the Commissioners of 1851 would make an outlay of £13,000 to carry out certain works in the Gardens. The Fellows agreed to spend £5000, and we spent £3000, and we made some further outlays, but these are outlays, not current expenses but all capital. The hon. member then twits the Council by saying we have spent the life subscriptions. Well, it is a matter within the discretion of the Council; it is a matter of the Charter whether or not it is not most to the interest of the Society to have the life subscriptions in the bank paying 2½ per cent, or expended in improvements on the Gardens. I hold in my hand a paper which refers to the time when that gentleman was very rampant in the Society—the annual Report of 1860, the pith of which is this—that at that time, as bearing on the Kensington interest, there was a debt on Chiswick Gardens amounting to more than £10,000, which somehow or other was wiped off by the subscriptions to the South Kensington Gardens [No, no]. Then, I suppose, the gentleman paid it out of his own pocket. I find it here [Reads the passage]. They had a Report in 1859, and they had an income which, though reviving, still was inadequate for the year, which had increased within the year £600. The debt bearing no interest, beginning in 1859, amounted to £8000, which, exclusive of a contract debt of £2700, had become urgent. Now, the state of matters in 1859, before South Kensington was heard of, was that the Society was £10,000 in debt, and this was paid off. But how paid off? I say by the subscriptions of gentlemen who have been kind enough to join South Kensington [No, no]. I should like to have it shown that it was paid off in any other way. I have yet to learn that Mr. Godson paid it off, and I take it for granted that by a very simple process it was paid off. Then he goes on to say, this is not a true account, which, of course, is not a very high compliment to the Auditors who have certified to the accounts. "Honest" was another word he made use of; but

whether true or honest the Auditors, who are respectable gentlemen, had certified that they were true accounts. It is altogether misleading the Society to say our income is only £5000 and our outgoings £15,000. It is no such thing. If you look at the present mode of working the Society, the expenses are between £12,000 and £13,000 a-year. The income last year, putting aside other things, was very close upon that sum. Hopes are entertained that our exhibitions may improve a little, and while the expenditure is put down at £13,000 or £14,000 the income is calculated to amount to the same sum. This gentleman, I have no doubt, is a great debenture-holder, and thinks it will give that body some encouragement to be always telling them they are in great jeopardy; but his statement is wholly fallacious on that point. Of course the debenture-holders know the property of the Society, and the loss upon the property, upon these grounds down here; and therefore I say, it is a misrepresentation to endeavour to alarm the debenture-holders by telling them their interests are in jeopardy. I think my observations have answered that gentleman (Mr. Weston), who read us his observations. He thinks great mischief will result from our connecting the Kensington Gardens with the Commissioners of 1851. I have already shown you the Kensington interest has paid off the Chiswick debt [No, no]. I maintain that is the fact. I have shown you were in debt. The facts are these, as stated in the Report, that you never had Chiswick in so productive and well-managed a condition as at this moment. I challenge anybody to say that within their recollections of Chiswick, Chiswick was ever so productive to the interests of horticulture or of seeds for the members as at this moment. If I am wrong I can be proved to be wrong. The figures show the value distributed over the various members. You will recollect that in 1859 a Committee was formed, of which I daresay Mr. Godson was a member, in order to sell off Chiswick, but the result of the establishment of this unfortunate Kensington has been that Chiswick has been saved, and not only saved, but put into a better position. As for the gardens here, Mr. Godson alluded to them as fit for a cemetery. They may look as a cemetery, but it is possible he may not be so clear in his vision as other people. But even if they have the appearance of a cemetery, they recommend themselves to the public, as is abundantly proved by the members increasing their subscriptions—perhaps with a view of being buried there. There is the fact, that the members are increasing, and that the number of persons frequenting the Chiswick gardens are increasing every year four times what they were before the Kensington interest went into partnership with Chiswick. I therefore demur altogether to the motion brought forward by Mr. Godson, and hope the members will give it a decided negative.

Mr. CLUTTON.—In looking to the capital account, I find that these gardens were originally formed by means of life members. I find that the life-members' subscriptions amounted to £17,000 originally, of which the greater part was invested in the formation of these gardens. It is quite true that last year we had a considerable sum invested in debentures, of which we have about £2000 now invested. The remainder has been spent, as the former sum of £17,000 was spent, in the formation of these gardens. It was scarcely possible when these were first formed, as everybody knows who has to create a garden, at once to do all that was necessary. In fact, you cannot get trees to grow, you cannot plant a garden all at once, and erect arcades and buildings, and, therefore, it was thought by the present Council that now was the time when the gardens required additional improvement and expenditure, and upon that recommendation they have invested a considerable portion of these life compositions. There is nothing in the Charter or bye-laws to prevent the expenditure of these life compositions. A similar thing has been done in the Botanic Society; therefore, I am not aware that anything improper or inconsistent has been done in including these life compositions in our accounts. They have been spent, as all former capital has been spent, in the improvement of these gardens, and not in ordinary expenditure. Mr. Clutton then went on to say, that the holding of exhibitions on Saturdays might be the secret of the Botanic Society's success. In this Society there was a great objection to Saturday. He confessed that the gardens might be remodelled with advantage, and he ex-

pressed a hope that that would be effected, but those presented were at the same time perfectly correct.

Mr. W. WILSON SAUNDERS said the Commissioners of 1851 had met this Society in the most friendly way possible. Whenever they wanted money, or in any way to improve their property, the Commissioners had manifested a liberality which he had never before known in landlords. The Commissioners not only displayed a most kindly spirit towards this Society, but evidently were actuated by the sincerest sympathies in the science of horticulture.

Mr. THRING said he was a Commissioner of 1851, and a debenture-holder and subscriber in this Society. At the same time he was perfectly independent of the Council, on which he never sat, but he fully approved of their proceedings. They were told by Mr. Weston that the Commissioners absorbed the Horticultural Society. It was absolute twaddle. It was, perhaps, unfortunate that the Commissioners had entered into partnership with this Society; it was certainly very unprofitable. They had done everything to assist the Society; the other day, only, they granted them £13,000. Still, if it were not for this constant "nagging," this discontent, they would get on very well together. If the gentlemen who ought to support the Society, however, found fault with everything, and accused the Council with dishonesty and of a want of truth, they could not go on—no society could go on under such circumstances; and he trusted, therefore, this meeting would give the most emphatic negative to Mr. Godson's motion, which was, in fact, a vote of censure on the Council; and if it was a vote of censure, it would be very much more manly on the part of those who supported it to say so—to say that their intention was to turn out the Council. As he said before, all of them who belonged to a club knew there was nothing so injurious as constant squabbling, constant quarrelling, and attempts to upset the authorities. He had no interest whatever in the matter, but he did advise the Society, as he had advised—nay, implored—other societies when disturbed by similar motions, to refuse to entertain any such motion—to refuse to pass a vote of censure unless there was a charge of absolute fraud made out against those who were put in power. What did Mr. Godson propose to do? To appoint five gentlemen who should examine the accounts from the beginning of the world to the present day? Really, were they going to be fools enough to sanction any such proceeding? and if, as Mr. Godson stated, they were in a state of insolvency, were they going to be fools enough to publish the fact to the world? There was never anything so monstrous. When the Commissioners first took to the Society, it undoubtedly was in a bankrupt state; but now, by whatever means—whether through the assistance of the Commissioners or not—it was flourishing—it was doing much better than it had done—it had excellent gardens, and afforded a considerable amount of gratification to the public, let alone the eminent services it rendered to horticulture. Mr. Godson had put his motion in an obnoxious form, and, in speaking upon it, had made use of terms which ought never to have been addressed to a society such as this.

Mr. WESTON remarked that he distinctly stated, on rising to second Mr. Godson's motion, that he did not agree with many of his observations. He had not the slightest intention of imputing fraud against any one; on the contrary, he believed the Council had faithfully performed their duty. He repeated that he did think the Horticultural Society did wrong in connecting itself with the Exhibition of 1851. The Commissioners had certainly done their duty in trying to prop up the concern: at the same time he did not think the interests of horticulture were benefited by such assistance. He considered the gardens were not in the right place for horticulture; they ought to have confined themselves to Chiswick, which was in a much more favourable position for the purpose. He did not know the name of the gentleman who had just spoken (Mr. Thring), but he had spoken rather too warmly on the subject.

Mr. JAMES BATEMAN was glad Mr. Weston had taken the opportunity of disclaiming any sympathy with the remarks of Mr. Godson, to which he (Mr. Bateman) had listened with very great pain. He was not prepared to dispute their accuracy in every respect, but the animus of opposition to the Society and the Council, which seemed to dictate the remarks, was painful to observe. Now, Chiswick was

t in a state of bankruptcy when the connection was d with the Commissioners, and by this time they would been in the *Gazette*, but for the assistance they got the Commissioners. Regarding the situation of Chiswick could speak from experience. For thirty or forty he had been connected with Chiswick, and he must at some of his happiest days had been spent within its

Consequently, his feelings were entirely in favour of risk. At the same time they could not shut their eyes change which was taking place in the aspect of horticulture in England, and in this metropolis in particular. remembered the first show held at Chiswick. It was a affair, but still it was a beginning. He saw gradually the increase in those shows until the flood-tide of prosperity set in and poured along until they came to form a very not to say the largest portion of the income of the cultural Society. He then with much eloquence expounded four points, in which he said, Chiswick was eminently in former days—first, as an experimental garden, in were gathered together a large collection of varieties of plants, to which constant additions were made as fresh ones were introduced; second, as a nucleus for the instruction and dissemination of rare plants, which he had given Chiswick its prestige in the first instance; third, as a garden where especially hardy plants might be in the greatest perfection; fourth, as the theatre of shows. He looked upon it that with a few exceptions of horticulture could be found had been explored; frequently, he argued that there was not that necessity of an establishment like Chiswick, which there was before the regions had been visited. There might not be as eminent horticulturists on the Council as was desirable as there were in former days, but it was not from disinclination on the part of the powers that be, but from a diminished supply of these worthies. Never was a time when there were so few eminent and practical men in the horticultural world as at the present day.

EDGAR BOWRING (Secretary to the Commissioners) said he was glad to hear that the accounts were intended to be simplified, because in their present state they were difficult to understand. It was a great fallacy on the part of Mr. Godson to say that their expenditure was £20,000 a year, and that they had only £5,000 to meet it. It was true the accounts showed a balance on the wrong side; £10,000 expended, and only £13,000 or £14,000 received. He faced the accounts that might appear to be the

If the Commissioners treated their accounts in the way, they, too, would appear to be in a state of bankruptcy, which was a position they could not for a moment entertain. It was the way in which the items should be separated. He showed that several accounts ought to be struck off, if a representation of the state of the Society was to be rendered.

It would then, he argued, appear in a much more favourable light than it did at present. The Commissioners put on record their satisfaction at the great decrease in the amount had been made by this Society in the way of expenditure.

The 4s. rent put down in the published balance-sheet of the Society, was merely a nominal matter, simply a recognition of the Commissioners' right as landlords of the property. Instead of owing to the Commissioners £4,000, as Mr. Godson represented, this Society owed not a single penny. It was necessary that the Fellows should know their position with regard to the rent to the Commissioners. The sum fixed as rental was £2400, or such less sum as might be their surplus. If their surplus was nothing, they did not owe the Commissioners a farthing. It was not till the summer of 1866, that the Commissioners' rights as landlords began to arise. That was five years after the agreement. If at the end of ten years after the agreement, the Society had in no single year paid the £2400, then the Commissioners had a right to step in and claim their rent. In the first five years it had so happened that they had paid a very considerable sum of rent, nothing this small amount last, £3000 in the Exhibition year, and more than the previous year; therefore, if the Society by hook or crook was able to pay the Commissioners £2400 in any year of the second five years, the Commissioners' right of seizure would not arise.

S. H. Godson, in answer to what fell from Mr. Bate-

man, said he had yet to learn in what way he was connected with the observations of his son. He then attempted to show the position of Chiswick at the time it came into the hands of the Kensington Board. Chiswick was £11,000 in debt, and he mentioned the circumstance to the Council, and asked for a committee of investigation. Several noblemen were present, and acquiesced in the motion, saying that if there was anything to explain it should be explained, and if there was anything to be laid before the Committee by them it should be laid before them. Their notion was, that the more the matter was inquired into, the better they should be able to get out of the difficulty. That was simply the object, he understood, of the motion now in reference to the affairs of this Society. Five of the members of that Committee became personally responsible until the debt was paid off, and it was paid off by reducing the salaries of the officers £700 a-year—by cutting down a fruitless expenditure. He then went on to argue that the Commissioners, who, he said, were bound to spend as much on the Kensington Gardens as the Society had not done so. The rental fixed for the grounds was more than they were worth; therefore he wanted to know where was the liberality of the Commissioners. Certainly the Society did not pay the rent, but at the end of five years the Commissioners could take the property, on which the Society had spent upwards of £70,000. The time, he thought, really had arrived when there should be an understanding between the Society and the Commissioners.

Cries of "Divide" were raised when Mr. Godson resumed his seat.

Mr. A. F. Godson begged to say that as the propriety of his using the words "true" and "honest" with reference to the accounts had been questioned, he used them in the sense of their own bye-laws, which provided for a full, straightforward, and clear account being rendered, and he had shown it was not a full, straightforward, and clear account.

The CHAIRMAN claimed the right to say a few words. After explaining how he came to occupy the chair, and that he had considered it his duty to encourage discussion from all sides, he congratulated the Society upon the unanimity with which he believed the Report was about to be adopted. The opposition arose, as it were, from a family party. With the exception of the three gentlemen—Mr. Godson, sen., Mr. Godson, jun., and Mr. Weston—they had had no speeches in any way reflecting on the Council. Mr. Godson, sen., had attempted to excuse his son using strong language on the ground that it was impossible to put old heads on young shoulders. Mr. Godson was a friend of his, and he had to offer him his congratulations, as he, too, appeared, although advanced in age, to have a young head on his shoulders; for, if anything, he had been more energetic, and shown more warmth, than his son [laughter]. With regard to Mr. Godson, jun., he (the Chairman), like everybody at the meeting, deplored the language he used. He possessed great fluency, and could turn figures from what they were intended to represent to something else he wished them to mean. That, in a young financier, was no inconsiderable merit. He had fifteen years' experience of parliamentary life, and he would recommend Mr. Godson, jun., if he wished his facts to be taken as true, to clothe his remarks with less suggestions of bad motive. He had to thank Mr. Bowring for his explanation—an explanation which he gave last year. It proved that nothing was so difficult as to explain a matter to persons whose whole object in life appeared to be not to learn, and who persistently declined to be informed. Mr. Godson objected very much to the form in which the accounts were drawn. Mr. Bowring likewise objected on the same score; and if he (the Chairman) chose he was at liberty to object, as they were put into the present form long before he had a seat at the Council. This, however, might be said, if ought were wanted in their justification, the archives of the Society would show that, at the time the form was adopted, Mr. Godson, sen., held the post of Finance Chairman. He hoped, however, as an objection was raised, the matter would be looked into. As to the *conversazione*, he fully justified that step.

The motion for the adoption of the Report was carried by a large majority.

Some questions affecting the admission of members and

the public into the gardens having been answered, the Scrutineers reported that Sir Joseph Paxton, Sir Arthur Buller, M.P., G. F. Wilson, Esq., B. T. Brandreth Gibbs, Esq., and Mr. Andrew Murray, were elected new members of Council; that the Duke of Buccleuch was re-elected President, John Kelk, Esq., Treasurer, and W. Wilson Saunders, Esq., Secretary.

This closed the business of the meeting. On the motion of Mr. Godson, sen., seconded by Sir A. Scott Waugh, a vote of thanks was accorded to the Chairman; and on the motion of Mr. Godson, jun., seconded by Mr. Bowring, a similar compliment was paid to the Scrutineers.

Inner Temple, Feb. 17, 1885.

SIR—As some misunderstanding has arisen from Mr. Edgar Bowring's complaint that I did not include the sum of £1045 (the receipts in the South Kensington Gardens on the non-exhibition days) in the sum derived from the exhibitions, I am desirous of offering an explanation. In my criticism of the accounts I followed the divisions given by the Council, dividing the whole year into exhibition days and non-exhibition days. The attention of the meeting was drawn by me to the former only, as I considered the Council had the greatest control over those. As the expenses at South Kensington are necessarily very heavy (indeed our subscriptions go to meet the extra expenses there and at Chiswick), no criticism on this point was made of them. Should Mr. Bowring wish to bring the receipts on the non-exhibition days to balance the loss on the exhibition days, surely he must also bring in the sums expended by the Society to procure those receipts. Should this be done the deficit becomes greater. In my analysis the account stood thus—

Exhibitions..... Receipts, £1493 ... Expenses, £2454 ... Deficit, £971

Mr. Bowring would put it thus—

	Receipts.	Expenses.
Non-exhibition days	£1045 .....	.....
Exhibitions	1493	£2454
	2538	2454

but adding the expenses of the non-exhibition days we have the full account,

	Receipts.	Expenses.
Non-exhibition days	£1045	£3692
Exhibitions	1493	2454
	2538	6146

thus leaving a deficit of £3618. There is only one other point I pray your permission to answer. The noble Chairman, in his reply on my observations, seemed to think that I complained of the system of accounts as fixed by some committee on the establishment of the South Kensington Gardens. My complaint, on the contrary (in which I did not stand alone), was that there was no fixed system of accounts. In the course of the debate on my amendment it was proved that the form of the accounts had been altered more than three times in less than five years. Surely this could not happen on a "fixed" system.

I remain, yours truly, A. F. GODSON.

SPRING MEETINGS.

WE are requested to state that, in consequence of the Spring Meetings of the Royal Horticultural and Royal Botanic Societies having been fixed for the same dates, the Council of the Royal Horticultural Society have arranged that the South Kensington Meetings of March 18th and April 8th shall be altered respectively to March 25th and April 15th, or one week later in each instance.

WEEKLY SHOW. *

THE weekly Show on Saturday, the 18th inst., was more interesting than any of its predecessors, though, like them, very deficient in the speciality set forth in the programme, there being only two small collections of Heaths in small pots shown by Messrs. Lee, of Hammersmith, and Mr. J. Fraser, of Lea Bridge. The latter also exhibited *Hovea jungens*, with beautiful deep blue flowers. Messrs. Lee had, in addition, a nice double Chinese Primrose, called *recta flore pleno*; *Dendrobium corulescens*, with seven fine spikes of flowers, and the white-and-yellow-flowered *Calceolaria pictata*, in fine condition. Mr. F. All gardeners to

Her Serene Highness the Princess Edward of Saxe Weimar, contributed three baskets filled with Winter Aconites and Snowdrops, interspersed with Ferns; also Violets; and Mr. Bull an interesting collection of new Japanese plants, including *Euryas*, *Euonymus*, the female *Aucuba*, &c. From the same exhibitor came *Imantophyllum cyrtanthiflorum*, and eight very good standard Orange trees, in fruit. Major Trevor Clarke sent cut flowers of forced *Chrysanthemums*; Mr. Batley, Rugby, bouquets for sale, and cut *Camellias*. Grapes were represented by three excellent bunches of Muscats, and West's St. Peter's, in good preservation, from Mr. Tillyard, gardener to J. Kelk, Esq., Stanmore Priory. As it was "all prizes and no blanks," it is merely necessary to say that the above objects received first and second-class certificates.

THE EXHIBITORS' MEMORIAL TO THE COUNCIL OF THE ROYAL HORTICULTURAL SOCIETY.

I DID not, though invited, attend the exhibitors' meeting in London. As regards flowers in general, I have no interest in them. In allowing my name to be attached to a remonstrance, I desired it to be confined to the Saturdays' National Rose Show. The National Rose Show is in a great measure national property. It stands, therefore, in a different position from all other exhibitions. In my friendly letter in a contemporary, whilst pointing out the inconvenience of Saturday as an exhibition day, I expressed a hope that the Society would reconsider the matter as regards the national flower. Unfortunately, as I think, they did not do so. The powerful names attached to the remonstrance in no way represent the number of nurserymen, gardeners, and amateurs, who object to Saturday shows; and who, though they have not signed the memorial, will not think of attending Saturday shows.

Saturday in most of the towns of England is either a market day or a day of greater business than any other day. On Monday, the higher orders drive into the country town, on Saturday the middle and lower classes go. Tradesmen do not like to be absent from home on either of these two days. Both days must encroach upon the Sabbath day; and glad am I to see that the trade and gardeners will not have their Sunday encroached upon for greed or glory. Even "F. R. H. S." allows it is a "mistake." I pointed it out to them through the medium of the press. Why did they not do what sensible men in ordinary life do, "correct their mistake?" Talleyrand said a "blunder is worse than a crime." This arrangement, being a great blunder, must be a great crime. The crime is committed against the Society itself. It would have been something in mitigation of the blunder if the Society, when remonstrated with, had said distinctly, "We will alter it another year to some more convenient day." It would have been still wiser had they said, "We will alter it at once." What is the issue? I have received a letter from the Crystal Palace Company, saying that they will adopt all the suggestions of the Exhibitors' Society. Can their suggestions then be inordinate?

I do not think the Royal Horticultural Society have a right to hold the National Rose Show on a Saturday. I admit they have a right to hold all other shows on that day, but the sequel, I think, will not endorse the appointment. Why, even the London nurserymen, and gardeners living close to London, have signed the remonstrance! Had a petition been sent round the kingdom for signature I believe it would have been universally signed. I should really be sorry unjustly to injure the Society. I would much rather read of its prosperity. Its prosperity greatly rests upon the good will and assistance of the nurserymen, gardeners, and amateurs of the kingdom. It is to see their commodities that people go in greater numbers to the Society's garden than they would otherwise do. There is still one thing they could do—put the great shows on a Wednesday, and hold the other shows on a Saturday and Wednesday alternately for one year. "F. R. H. S." appeals to the generosity of exhibitors to go this year on the Saturdays. Such would be a very unwise act; for it is plain that if success attended the Saturday shows they would not be altered to another day. The argument then would be, "See how well they succeed!" I do not like *émeutes* myself, but there is always something wrong where they occur.

As regards Saturday, it is not that "I won't go, but I can't." The parishioners will say:—

"By our pastor perplex'd
We cannot determine;
'Watch and pray,' says the text.
'Go to sleep,' says the sermon!"

My "best" man is the parish clerk, and he will say "Amen" in the wrong place!

I should not think the Exhibitors' Society have sent a schedule "with their own value of the prizes affixed." At least I have not seen any such schedule. Probably it relates to Saturday certificates. "F. E. H. S." asks, "What is the end of this rigmorale?" I will tell him: If he cannot persuade the Society to alter at least their grand show days from Saturday to any other day than Monday the nurserymen, gardeners, and amateurs will not send their commodities; and "the large proportion of Fellows," simply lovers of pleasure, gay meetings, and crinoline exhibitions, will have to make out their holiday with "crôquet, quoits, and Aunt Sally!"

In conclusion, I am glad to see the names of Sir J. Paxton, Mr. Wilson, and Mr. Brandreth Gibbs, a good administrator in agricultural matters, elected into the Council of the Royal Horticultural Society. One pennyworth of common sense is worth a pound of wit!

I am a remonstrant chiefly, but not only, as regards the National Rose Show, and I am sure that that Society would never have been given up to the Royal Horticultural Society had it been supposed possible that Saturday would have ever been fixed for the exhibition of our national and much-beloved flower.—W. F. RADCLIFFE, Tarrant Rushton, Blandford.

SIR.—It would be very easy to show that your correspondent, "F. E. H. S.," is either a partisan and friend of the Council, or knows nothing of the subject in dispute between the Council and the exhibitors. I am told the Council in their report have made a charge against the exhibitors of dictation, which I and every member of the Exhibitors' Society repudiate. When we get the report of the Council we can reply formally from our Committee. Your correspondent writes as if the Council were trying something new for the first time. Why, have they not had novelty enough, and have they not been going from bad to worse for the last three years? Nothing but novelty, and no effect! Now they have the astounding novelty of an Azalea show on the 17th of June, a month after they have passed their best blooming!

Can the Council expect the exhibitors to join them in all such vagaries? And can they wonder that we should send in a remonstrance stating our inability to co-operate with them, and refusing to exhibit unless some consideration is shown for the convenience of those on whom the exhibitions depend for success?—A MEMBER OF THE EXHIBITORS' SOCIETY.

A HOWL.

A HIGHLY distinguished, but in his latter days a somewhat eccentric, nobleman that I knew once as one of my parishioners, used to take great delight when on his daily drive in getting out of his carriage, standing in the middle of the road, and literally howling at the top of his voice. What he did it for no one could tell. Whether to show that the voice that once held entranced both Houses of the Legislature, that made many a bewheeled jury think "the worse the better reason," was still unsurpassed in volume, though the mind that directed it was not what it once was; or whether he had some special grievance rankling in his mind, and that he thought it better to vent it this way than on any of the inmates of his house; or whether it was intended as a protest against all and everybody, was never known; but it was evidently a great relief to him, and he who went out testy and cantankerous, snapping the head off any one who spoke to him, was after this more amiable and tractable. Of course his family gladly indulged the whim; for, as the big fellow whose little wife would beat him said, "It pleases her and doesn't hurt me in the least," they felt that what was a relief to him was a boon to them. Well, I want to have a howl. I have a grievance—it is not against any one

in particular, but I do know why I make it; and although I may not do anybody any good, I shall certainly, as some people wickedly say of homœopathic medicines, not do them any harm. It will be a relief to my mind to give it, and who knows but some one may catch up the echo? My howl—(stand out of my way, good folks who think all beauty is concentrated in a Fern, an Orchid, or a fine-foliaged plant)—is about the neglect of florists' flowers generally, and of the Gladiolus in particular, in and about the metropolis.

Let me be understood first of all in what I mean by florists' flowers. I will take the term, not in its enlarged but restricted sense. I am aware that under any definition of a florists' flower you must include the Rose, the Dahlia, the Pelargonium, and the Azalea; but they are not neglected—No: the flowers to which I specially allude under this title are the Auricula, Pansy, Pink, Carnation and Picotee, Ranunculus, Tulip, and Gladiolus; and the position I wish to advance is this, that there is not sufficient encouragement from any quarter given to these flowers in London, and that hence they will rapidly go out of cultivation; for although those who are really lovers of any particular flower will grow it with no prospect whatever before them, of exhibiting but simply for their love of it, yet I maintain that so great is the influence of horticultural exhibitions, that just in proportion as a flower is encouraged and shown will be the increase of growers of it, and the estimation wherein it is held. Had the Dahlia not been encouraged as an exhibition flower would it ever have reached the high perfection to which it has attained, and be valued, as it is everywhere, as a fine autumnal flower? What was it in times past that made the Auricula, the Carnation, and the Tulip what they became but those exhibitions at "The Horns," Kennington, at the Surrey Zoological Gardens, and of the National Floricultural Society? And why is it that now one after another is abandoning these? Because people think far more of the most trumpery novelty in "bedding-out plants" and will give encouragement to anything save those flowers of which the cultivation is within the reach of any amateur who, with his little plot of ground, desires to grow his favourites.

I believe a great deal of this arises from laziness. No florists' flower can be properly grown without a great deal of trouble; and a small garden may be made very showy, glaring, and hot-looking with Tom Thumbs, Verbenas, &c., without either much skill or trouble. Look, as I have often done, at the artizan with his frame of Auriculas, his stage of Tulips, or bed of Pinks. See what care and skill he shows in managing them, how all the year round they are in his mind—his first thought when he goes out to his work in the morning, his last before he goes into his home at night, and then tell me, What are you doing to encourage this man now? He was, many a time, a raiser of seedlings; he had of course (as who has not?) exaggerated notions of their excellence; but when he did satisfy the critical eye of a Turner or Keynes, and saw Smith's True Briton, or Jones's Jolly Tar, or Robinson's Fair Ellen in the catalogues, was he not a proud man? And when he got his few pounds for his child, and brought it home to the good dame instead of drinking it out at the "Blue Bull," did she not forgive him for taking the blanket off his bed that cold frosty night to put it on his frame (for I have known such things done)? Yes, I trow; and may we not howl over the good old times, which seem to be gone from us for ever in these days of Scarlet Geraniums and polychrome beds?

But it may be asked, Do not the Royal Horticultural and Botanic Societies, and the Crystal Palace, encourage the growth of these things? They give prizes for them undoubtedly, but in very scant measure, and in some of them far behind even the provincial shows; and it is not two or three prizes, for which amateurs have, perhaps, to enter the list with nurserymen, that will really encourage the growth of these flowers. Let me take one of the newest and at the same time easiest grown of florists' flowers—the Gladiolus, and let me beg all whom it may concern to read the following, occurring in an article on that flower in the "Florists' Guide." The writer hails from "sweet Dublin," and I know him to be what he claims there to be, one of the most successful growers of the flower, and one of the most enterprising purchasers as a necessary consequence. "And I may here observe that we have good prizes to compete for: for autumn, 1865, a silver cup value ten guineas, a second

ditto worth eight guineas, with good third and fourth money prizes, are offered for the best thirty-six Gladioli, containing not less than eighteen varieties. I think this beats South Kensington and the Crystal Palace too." I should think so too. Why, at South Kensington no prizes are offered, and at the Crystal Palace nothing higher than two or three pounds, and for these all have to compete together. Why, they do these things better at Brighton; there they give £3 for their first prize, which I am glad to say I carried off this year. And what is the result in a commercial point of view? The cheaper and easier-grown Gladioli find a sale about London, but none of the more expensive kinds.

What is to be done? As to the Royal Horticultural Society ever doing any good for floriculture I must confess my most decided doubts, and those who think otherwise are of a more sanguine temperament than I am. My own opinion is that some fresh organisation is wanted. The florists should meet together and talk over their grievances, and try what plans can be adopted to remedy them. National societies, as they are called, have proved a failure. At such we may have a good display; but then, they are not national; the difference in climate between the north and south of England is so great, that when flowers are out of bloom in the one they are only just coming in in the other. Take, for example, the National Auricula Show, to which, let me say, I wish all honour, especially as this year it is to be under the fostering care of that veteran and kindly florist, Mr. Headley, of Stapleford, near Cambridge. If it is held, as it has been done, on the 30th of April, nearly all the southern growers are shut out, except perhaps such as Mr. Turner of Slough, who has such a large stock that it would be difficult at any reasonable Auricula time to catch him napping. But at neither of the two National Shows that I have attended could southern growers have a chance; while last year, so backward was the spring, that the more northern ones had not their collections in bloom. Hence I would advocate a society, irrespective of any party, clique, or set of men whatever, for the purpose of seeing if something cannot be done for floriculture in and about London. See how Tulips, Carnations, Picotees, and Pinks are going out of favour and cultivation; and if we do not wish all florists' flowers to share the same fate something must be done.

And now I have had my howl. Much good may it do me, say some. I have, however, I think, pointed out a defect in our present horticultural arrangements, and hope some one may agree with me.—D., Deal.

STRAWBERRIES.

In page 112 of THE JOURNAL OF HORTICULTURE, February 7th, is an article by "A FRAGARIAN," headed "La Constante and Some Other Strawberries." That article refers to my quotations from Mr. Taylor's note, and I will now reply to "A FRAGARIAN'S" article, in which there are seven paragraphs.

First paragraph. It must be a long line of Strawberries to produce 250 runners, judging by the slow running of La Constante here, during the four years that I kept it. If the reader will refer to Mr. Turner's catalogue, I think he will see it stated, that in his fine land it is a slow grower. I first gave it to Mr. Rivers about two years ago, and also to Mr. Turner. The former was this year obliged to send to France for runners. When I sent it to them, I was obliged to send some offsets with the runners, on account of the difficulty of obtaining the latter. When plants are disfruited, they usually run freely, and at once; but, even on this plan, I found a difficulty in obtaining runners. Strawberries may, like some Roses which are not hardy in all soils and situations, be hardy in land suited to them. The British Queen is an instance. Again, Strawberries which otherwise suffer much, may be hardy if well established before winter sets in. In a word, from slow and late-running, they require two winters' and one summer's nursing before you can crop them, unless you have a sufficient number of plants to bed them, and depend upon numbers for crop. This, of course, can be done, and the plants may be thinned for the next year. When La Constante is established it is hardy, though not so hardy as Eliza and Wonderful. Early running and

an able article by Mr. Cox, in the "Florist," of February. Substituting the word "straw" for "grass," I assent to it cordially. I found here that La Constante after being nursed for this long period gave me one good crop, but the plants sickened, did not run, and were worthless the next season.

Second paragraph. I regret much the loss of Mr. Nicholson, a most kind man, to whom I am indebted for Wonderful. The runners sent here from his establishment were always first-rate. I had some La Constante from him, as well as from France, but the result was the same. No man is more willing to acknowledge its merit as a fruit. Its flavour is *sui generis*. Its form, both as to plant and fruit, is perfect. "A FRAGARIAN" concedes what I have stated. He says: "It requires good and patient treatment, for it puts forth its runners so late in the autumn, that they are not able to gain size and strength sufficient to bear fruit the following summer." Life is short, and this process is too slow.

Third paragraph. That the process is slow, observe the following in proof. He says: "About Christmas they [that is, the runners planted 6 inches apart] are mulched with strawy manure, care being taken not to smother the plants. In the August following [that is, when the plants are twelve or thirteen months old] another trench is dug about a spit deep. The yearling plants are taken up carefully with a trowel, and they are planted in this prepared ground in patches of two or three together, a space of 14 or 15 inches intervening between the patches. They are mulched again at Christmas. The following summer, plants so treated have never failed to produce an abundant crop of first-rate fruit." I doubt not this at all. Still La Constante suffers in burning summers; the fruit is all exposed and baked, and being ripened simultaneously, you must eat it as fast as you can.

Of course, "A FRAGARIAN" has told us by a periphrasis, that his land is first-class, for he speaks of removing two-year-old plants, a practice that will certainly not succeed in any land that is not naturally a Strawberry soil. Still it is fair to say, that I have known two-year-old British Queens removed, and crop heavily; but this was in the very finest and deepest land, genial to the variety.

Fifth paragraph. As regards Empress Eugénie, I admit that in cold wet seasons, being so large, it is not good, but it is a noble production. Excepting the Frogmore Pines, it is the best of all the very large sorts. Strawberries which have travelled a distance are very different from those tasted *in loco*. We must have quantity as well as quality, and both in one. A beggar once told me there was "no taste in nothing."

Sixth paragraph. I admit the excellence of the Strawberries named; but some of them are only suited to first-class land. I should not say Elton Pine (called in France pickled Gherkin) is the best late Strawberry. It is hardy, handsome, and useful. The Frogmore Pines are far in advance of all other late sorts. In evidence of its fine constitution, I may observe that I fruited heavily, they running at the same time, my two-year-old plants kindly given me by Mr. Turner. I sent Dr. Hogg the second picking, and he can tell whether they were large and good. The plants brought their heavy crop to perfection, and are strong for 1866.

Seventh paragraph. I agree to this. We cannot form a just estimate till we get our own runners put in sufficiently early to be established before winter sets in.

Lastly, in future, I shall take no notice of any remarks on my contributions, unless the writer give his name and place of abode. I never myself pay the slightest attention to such communications. — W. F. RADCLIFFE, *Terrace Rushton, Blandford.*

CLIMBING DEVONIENSIS ROSE.

HAVING read in your Journal of a climbing *Devoniensis* Rose sent out by Mr. Curtis, of Torquay, it may be interesting to your readers to know the true history of its origin.

In the year 1857 I budded some of the old *Devoniensis* on the Celine stock, when on the following year many of the plants made shoots from 3 feet to 9 feet in length. I have now in my stock one of the original plants I obtain my

buds from, it having withstood the severe winter of 1860-61. Many of your readers will be inclined to think there are two varieties of this magnificent Rose. This I beg to contradict, having supplied Mr. Curtis with buds as well as plants.—S. J. PAVITT, *Rose Cottage, Bathwick, Bath.*

HARDY FERNS:

HOW I COLLECTED AND CULTIVATED THEM.—No. 10.

My next Fern-tour, after Cornwall, was to the Lakes.

I seemed to have left in the south the monuments and recollections of the past, to bask for a time in the roseate hues shed back upon the world from the great intellects that had so lately gone down amidst the Westmoreland hills. At the Carlisle station Wordsworth's little grandchild met me with a basket of Grapes. I took them with me into the land so sacred to his memory; and not to his memory alone, for the whole district seemed haunted by spirit shapes, flinging at me choice bits of sparkling wit or caustic humour, with here and there strange touches of tender melody. Sometimes I seemed to hail Professor Wilson, sometimes Coleridge; while Southey and Wordsworth gave me more friendly greeting, lingering with me by every lake and tarn, speaking to me out of the rushing waterfall, setting their own sweet rhymes to Nature's harmonies.

Our first halt was at Windermere, from which we made many excursions amongst the hills. We found *Hymenophyllum Wilsoni* at Dungeon Gill Farce, to which we drove by Loughrigg Fell, seeing a curious sort of haymaking going on by the way, where men took the place of pitchforks, and cast the hay "abroad" with their hands. In some parts of the Pyrenee I have seen the same custom prevail, and when the hay was made it was gathered together in a large sheet, tied up, and carried away on the heads of women to the rick. It is rather a scramble to reach the *Hymenophyllum* at Dungeon Gill, but mine host at the little inn is expert in giving help, and moreover, he is a botanist, and found us many rare wild flowers that would have escaped a less experienced eye. The inn is far removed from any other habitation, and the master told me that he found botany the greatest resource during the many anxious days he passed, before the Lake season really set in, waiting for visitors who would not come. How great the poor man's anxieties were his keen watchful eye, his pale anxious face, too fully denoted. He had been in service; this inn was to be let; he married a good girl whom he had long loved, and began life hopefully. The first year all went well, but by-and-by another inn was built in a more convenient situation. Visitors dropped off to the rival house, and the poor young couple were in deep fear for the result. When I remember Dungeon Gill in its drear loneliness amongst the hills, I fancy I see the wistful eye looking up the long road for the help that visitors alone could bring. I longed to make every one I met drive over to the inn that stands waiting for the "Good time coming," within hearing of the tumbling waters where *Hymenophyllum Wilsoni* can be found for the seeking, to reward them for their pains.

We drove back to Windermere by Grasmere, Rydal, and Ambleside. As we got near the church at Grasmere the driver looked over his shoulder at us and said, "Would we wish to alight at the church? 'Parties' mostly liked to say as they'd seen Wordsworth's grave." So we alighted, and stood beside the plain stone slab, on which was engraved but the two words "William Wordsworth:" yet what magical words they were! They seemed to open a long vista down which troops of "parties" were slowly pacing to and fro the poet's grave—"parties" from every quarter of the globe, princes and peasants, statesmen and poets, old men and little children—all drawn to the one solemn spot where Nature's poet lay so calmly sleeping amidst the scenes he loved so well. What was it in the quiet poet that moved all hearts? Was it the "touch of Nature" that "makes the whole world kin"—the Nature natural, yet very human too?

Ambleside was busy as we drove through. Children with happy faces were running about with every sort of quaint device, made in rushes and flowers, which they were to put up in the church at evening service, in honour of the ancient custom of Rush-bearing—a custom for which no

reason is now given. May it not be the remains of the custom, which prevails abroad, of strewing the churches with sweet-scented leaves and flowers, when there is an "Exposition of the Blessed Sacrament?"

I went to Grasmere church on the following morning, but I thought the quaint devices wanted the children's faces to set them off. It is a lovely drive from Windermere to Ulleswater by Troutbeck and Kirkstone Pass. On this drive I first saw the *Allosorus crispus* in perfection. Hitherto I had only possessed little roots I had bought for 1s. 6d. each, which I had cherished as great rarities; but on this day I saw it in immense quantities, and I was told it was used by the poor people to heat their ovens with. What a surprise it was! I first discovered a few plants in a wall: I begged the driver to stop while I dug them out. He laughed and said, "Wait awhile, Ma'am, you'll find better than that." A little further on there were some small tufts by the side of the wall. I stopped the driver again, and again he laughed and said, "Wait." So I waited till we arrived at the inn at the top of the pass, and there it was growing everywhere; but there is such a thing as being embarrassed with riches, and it was difficult to decide which to take. I did what I advise other Fern-lovers to do; I packed up a large hamperful, and sent it off by rail, home. The hostess of the inn showed me also some *Asplenium viride*, not in tiny plants as I had always seen it, but in large beautiful masses. I bought a large clump for 6d. I asked if I could find it for myself. "Oh, dear no! quite impossible." It only grew in the most inaccessible places where no one less brave and active than her spouse dare venture. I do not think I quite believed this; but the horses were rested, so we drove on to Patterdale—beautiful Patterdale!—surrounded on all sides by hills, reflecting themselves in the clear waters lying at their feet.

I cannot write of Patterdale without a greeting to our good friend "Jack," guide, herbalist, fernist, umbrella and watch mender, glazier, &c. I made acquaintance with Jack at once, and asked of the Ferns. Could he take me to find the *Asplenium viride*? "Impossible;" it only grew in the most dangerous places; but he had a store of plants, found long ago, that he could show me. I was taken to the spot, and saw about fifty plants, very faded and blue-looking as if just transplanted. I asked Jack if this were not the case. "Well, yes;" he had brought them from his own to the inn garden. Jack offered me a part of his spoil. No, I must find some for myself. Would I take him with me? Certainly, and give him an extra shilling if I found plenty. So the next day we set off for the ascent of Helvellyn by Grisdale Tarn. Half-way we ascended the rocky path, down which little streams were trickling here and there: presently there was a cry of "Found!" and I saw my first plant of *Viride* growing wild; it was peeping from under a dripping boulder of rock, like a green lizard. I could only find it in the places where the trickling stream kept perpetual moisture, and yet where the sloping hill and pebble bed made perpetual drainage. I learned the peculiar habit of *Viride* on this particular morning, and I never allow any stagnant moisture to be near it; if I do, the fronds rot and drop off. The views from Helvellyn are magnificent: they steal on the waiting eye, as you ascend higher and higher, in new and varied forms of loveliness. Lake after lake, like silver purified, nestles amidst these ever-changing, ever-lasting hills, over which a million lights gleam and haste away. Ulleswater, Windermere, Esthwaite-water, Coniston, Bassenthwaite, and Thirlmere were visible; the Ayrshire mountains, Solway Firth, the sea, and range after range of mountains, the nearer ones seeming as soft emerald-coloured velvet, those far away dark blue and sober grey. But the ascent of Helvellyn is not all pleasure; it abounds in treacherous bogs, in two of which one of our horses floundered.

The day after the ascent of Helvellyn I had a private hunt for *Viride* in an opposite direction, and I was most successful, finding quantities in the wake of the trickling watercourses down the hill, but not one root did I find in any other situation. I did not once find it mixed with *Trichomanes*, which proved to me that these two Ferns require totally different situations in cultivation.

On the mountain side, where I found the *Asplenium viride*, I discovered the very beautiful *Cystopteris* I have mentioned

in one of the earlier chapters. I have named it "Elfina." I have shown it to a great authority on Ferns, who calls it "near alpina," but I believe the acuteness of its teeth remove it entirely from alpina, and the division of the fronds from any other named species.

The recollection of Ulleswater and Patterdale is very pleasant to me; the silver mines and the *Asplenium viride* give it an individuality of its own.

Derwentwater is also lovely, and there are many magnificent excursions to be made from it. I saw the waterfall of Lowdore at its best; the snowy waters were playing all sorts of freaks in the gleaming sunlight, sparkling with fun as they caught his rays, and darting back foam and spray from the sober rocks which stand steady and firm amidst the "muttering and sputtering" uproar. I spent one day hunting for Ferns in Borrowdale, and found *Asplenium septentrionale* on the Castle Rock, but only in very small roots. From the way in which it was growing I have no doubt that it may be found in some quantities in the neighbourhood. *Asplenium germanicum* is also to be found

in Borrowdale; but the guides are such diligent seekers they scour all the accessible places, leaving very little for timid climbers. In the neighbourhood of Castle Rock *Hymenophyllum Wilsoni* grows in abundance. It may be found in long trailing masses hanging to the damp rock.

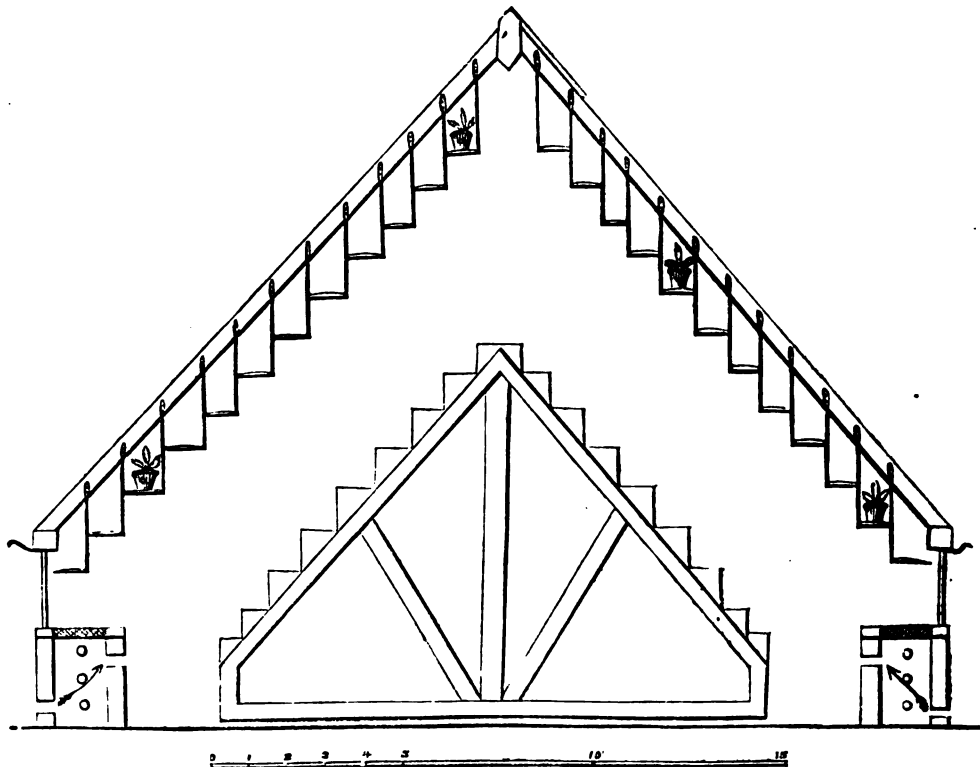
If I visit the Lakes again I hope to find both *Asplenium septentrionale* and *germanicum* about Honister Crag, where I believe it has several times been seen. Who can tell the glories of the mountain paths in the district round Honister, where waterfall answers waterfall, and bleak dreary moors melt into sweet homeland scenes; where children play about the cottage doors, and join their voices with waterfall and mountain in one grand *Te Deum*, for ever ascending from a grateful earth to the throne of Nature's God in heaven? I know not why it is that mountain districts should have so soothing a power upon the mind; but there is something in their vastness and their stillness that seems to hush all rebel thoughts, and bow the heart of the created in simple, unquestioning awe at the feet of the Creator.—*FILIX FEMINA*.

STRAWBERRY FORCING.

(Concluded from page 111.)

THE essentials in forcing Strawberries are an abundance of light, close proximity to the glass, ample ventilation, and if possible air beneath them. Nothing is so good as shelves about 15 inches from the glass, one along the front and another at the back of a vinery. Where there is a quantity to force it becomes a question how the plants are to be accommodated. Stages when near the glass are good; but the best plan in my opinion is to have shelves fixed by holdfasts to the roof, as shown in the accompanying engravings.

The roofs are steep; the shelves inch deals, 9 inches wide, and on these are laid turves, 1½ inch thick, grass side downwards. The holdfasts are quarter-inch iron, 1 inch wide, and the end next the rafter is punched with two screw holes, and fastened to the rafter. The lower end is bent at right angles, and has a rounded threaded point that passes through a hole in the holdfast next below it, and a nut screwed on keeps it in its place. This will be easily understood by a reference to the woodcuts. Any one with a



little ingenuity will be able to have them made, and, I have no doubt, to improve upon them. The points secured are close proximity to the glass, and a circulation of air under and everywhere about the plants. Strawberries may be grown I am aware, without shelves; but they never do so well as when the glass is elevated so as to receive

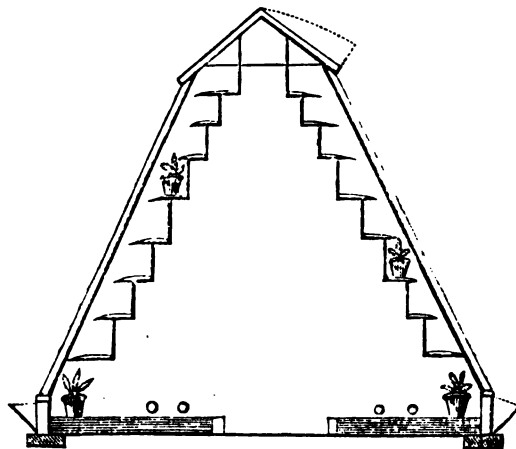
air from beneath. I have had them in pits close to the glass, but not having the undercurrent of air they did not afford nearly so good a crop as plants on shelves with air playing all round them.

When very early fruit is desired the plants should be placed on, or slightly plunged in, a bed of leaves made suffi-

ciently high to raise a gentle heat of 70°. This should be done in the first week in December, and the lights must remain off as long as the weather is fair, and only be put on during very wet periods, and even then a current of air should be afforded. Prior to this, the plants should have been rested for a period of six weeks by keeping them dry at the root in a cold frame, and exposed at all times except during very frosty or wet weather. They should, therefore, have the buds well developed by the middle of October.

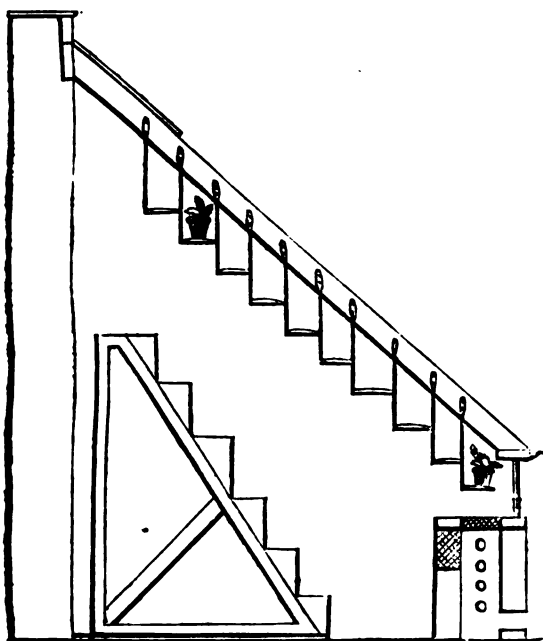
The pots being set on a bed of leaves early in December, the plants will have had an inducement to form fresh roots, and to get these in advance of the leaf-growth is a main point. This being effected, the pots should be cleaned, and any old yellow leaves taken off. The shelves are then covered with turves, grass side downwards, and the pots placed on them, the interval allowed between the pots being half their diameter. Roots will most likely be protruding through the holes at the bottom, and will soon make their way into the turves, increasing with the growth of the plants. These should not remain so long on the bed of leaves as to root into it, nor should they be taken from a bed of leaves in which they have been plunged whilst it is hot; for, in the one case, they will receive a check through a loss of roots, and in the other, in consequence of a loss of bottom heat. Care should therefore be taken to place the

but with clear intervals, and 15° on bright sunny days, every increase of temperature being accompanied by a correspondingly greater amount of ventilation.



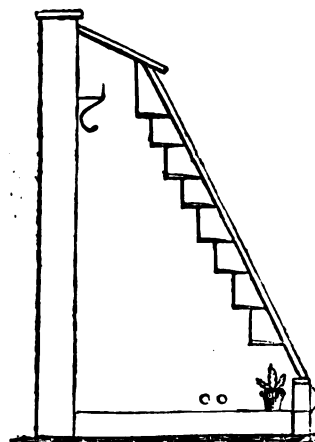
Strawberry shelves in Orchard-house.

The plants should be watered so as to keep the soil moderately moist for the first month, guarding against extremes either of moisture or dryness, for both are injurious. After this, and as the plants throw up their flower-trusses and make a large increase of foliage, they should be well supplied with water, never allowing them to become dry, though they ought to exhibit signs of moisture being needed before any is given. A gentle syringing morning and evening will refresh the plants, and at the same time secure a moist atmosphere in the house. After the first month syringe once daily in the morning until the fruit changes colour for ripening, when syringing the plants should be discontinued; but let the floor, walls, &c., be sprinkled twice daily, in order that the remainder of the fruit may swell well. Some make a point of not syringing the plants when in blossom, but I never found the flowers set any worse from a gentle bedewing of water through a fine rose; on the contrary, I fancy they set better in consequence, and are not so liable to half swell the fruit in some parts and not in others, resulting in poor uneven-shaped fruit.



Strawberry shelves in Vinery.

pots on, not in, the leaves. The temperature of the house into which they are introduced should be 40° at night, and from 45° to 50° by day, but the latter temperature only with sun. Day and night, except in very severe weather, air should be admitted, diminishing, of course, the amount at night, even in mild weather, and increasing it with sun heat. It is a good practice to admit air both at top and at the lowest point of the house; and if the air admitted pass over the hot-water pipes or heating-surface anything like chilling the plants will be prevented. The air should be given as early in the day as practicable, closing early so as to catch or retain as much of the sun heat as possible. For the first month a minimum of 40° is the proper temperature; a month after their being brought into the house the temperature may be increased to 45°; in another fortnight to 50°; and a fortnight later, or two months after introducing them, it should be 55°. At this the temperature is steadily maintained until the flowering is past, when the minimum may be increased to 60°. The maximum temperature will be regulated by external influences. On dull days a rise of 5° above the night temperature is to be allowed until the blossoms are set, 10° on days somewhat cloudy



Strawberry shelves in Peach-house.

After the fruit is fairly set every alternate watering may be of liquid manure made of half-rotten cowdung, and tolerably strong, adding a peck of soot to every sixty gallons of liquid. The liquid manure and all water given should be of the same temperature as the house. The plants should be kept well watered daily. At the time of flowering they should be gone over, and any that do not promise a crop had better be put outside, and their places filled up with something better. In introducing plants it is well to be able to discriminate between those which are likely to afford a crop and those which are not.

To prevent the fruit from hanging down over the sides of the pots, and the fruit-stalks breaking, a piece of twine is strung on the sunny side of the pots, about an inch above the rim, and on this the stems rest. This is a good practice when the crop is heavy and the stems long, but unless the stem be drawn by hard forcing the strings are not necessary, for the fruit swells all the better when the stems are bent down, the fruit touching the ground on a level with, or a little below, the rim of the pot. The first crop of fruit, presuming the plants to have been treated as above, and early kinds employed, will be ripe in March.

Successions may be obtained by introducing a batch of plants into a cold frame, or pit, at the same time as the first are taken into the house, putting them on a bed of leaves for a fortnight, then setting them on shelves in a vinery or other house having a night temperature not exceeding 40° by fire heat. At the time of removing them a batch of plants should be placed in the frame as before, and so on, working until the middle of February with the earlies, when a batch of Keens' Seedling may be introduced, and also Wellington and Oscar, and a month later the British Queen and other late sorts, the last lot being introduced about the middle of April. It is not necessary to place the pots on a bed of leaves after the middle of February, nor before that time if the pots are well filled with roots, and the buds well developed; but it is desirable to have them in a cold pit, frame, or house for a few weeks previous to introducing them into the house where they are to fruit. There is no better place than a cold vinery, or orchard-house, where they will be kept rather dry until wanted, or during winter if they remain there so long.

Where there is a number of Peach-houses and vineries that are started at intervals, no difficulty will be experienced in forcing Strawberries, a quantity being kept ready in cool frames, or houses, to be drafted into the vineries and placed on shelves as the houses are set to work, the temperature required for forcing Vines suiting Strawberries exactly. I can remember the time when it was very common to force Strawberries in Pine-stoves, introducing them at once from a cold frame into a succession-house, with a temperature of 55° or 60° by night, and keeping them there until the fruit was set, when they were introduced into the fruiting-house, the temperature being 65° at night, and from 75° to 80° by day. Roasted in this way, I have known a fair crop obtained, the Roseberry being the favourite; but now we must have a good many mouthfuls, and of good quality, instead of a taste. This can only be effected by bringing on the plants gradually, and not forcing very hard until the fruit is set, and not then except to obtain fruit very early. A temperature of 60° from fire heat is as much as the Strawberry will bear.

I need not enter upon the cultivation of Strawberries in vineries, nor treat of successional crops, an epitome of the temperature above will suffice. For the first fortnight the heat should be 40° by night, 45° by day; during the second fortnight, 45° by night, and 50° by day; in the third fortnight, 50° by night, and 55° by day; in the fourth fortnight, 55° by night, and 60° by day; and these temperatures should be maintained until the fruit is set, when it may be increased to 60° by night, and 65° by day. All these relate to temperatures from fire heat and on dull days. On cloudy days having clear intervals the thermometer may read 5° higher, and on bright days from 10° to 15° higher, when, the maximum amount of air being given, it will not matter if the temperature be considerably higher, always provided that it is from sun heat.

Perhaps one of the best modes of growing Strawberries is on shelves in cool vineries or orchard-houses. They also succeed admirably on the borders of orchard-houses, providing the trees are not so close together as to shade them too much; but, taken all in all, the best place is a shelf 15 inches from the roof in front or both sides of a span-roofed house, or at back and in front of a lean-to one, the back being occupied with early, and the front with later sorts. Of the early kinds, Black Prince, Eliza (Rivers's), Eclipse, Keens' Seedling, and Oscar are excellent; and of the later sorts, British Queen (extra good in an orchard-house or cool vinery), Carolina Superba, La Constante, Sir Harry, and Sir Charles Napier. These being raised in the manner previously stated, should be kept on the borders during the winter rather dry.

About the middle of March they should be cleared of the dead leaves, and the pots cleaned and placed on the shelves, first of all putting on these, grass side downwards, a turf or turves, exactly the width of the shelf, and 1 inch or 1½ inch thick. If turves are not to be had, a lath, three-quarters of an inch wide and 1 inch deep, nailed on both edges of the upper side of each shelf, will leave on a nine-inch shelf a space 7½ inches wide and 1 inch deep. Fill this with two-thirds loam and one-third cowdung half-rotted, or rotten manure of any kind, and on this stand the pots. Keep moist until growth fairly commence, and afterwards water freely, using weak liquid manure until the fruit change colour, when water alone will do. The usual treatment given to these cool houses suits Strawberries exactly, abundance of air and light being given and a good syringing, but a close moist atmosphere should never exist.

These plants will prolong the Strawberry season at least a fortnight or three weeks, the earlier kinds being ripe in the latter part of May, and the late ones succeeding them, just when the earlier varieties are coming in from the open ground.

The plants once fruited are of no further use unless planted in the open garden, where they may yield a few fruit in autumn, and be very prolific years afterwards, especially on soils where Strawberries yield plentiful crops of leaves and but little fruit. In such I have found plants that have been forced in pots afford excellent crops when others yielded little but leaves.

In conclusion, fill the house with tobacco smoke whenever green fly appears, always letting the plants be dry at the time. Once growth has commenced never allow the soil to become dry, but keep it well watered. Never use saners, they rot the roots by keeping the soil sour; use sods in preference, or set the pots on a shelf with laths nailed on the edges, filling the shallow trough thus formed with rich compost, for the water then drains away and the roots run both in the sods and soil. Keep near the glass, and allow the plants air above, beneath, and all round, and plenty of it. Give manure water after the fruit is set as often as you like, but let it be weak, and use no more fire heat than is necessary to maintain a steady progressive growth. Grow plants anywhere, securing these conditions, and the result will be an abundant crop of excellent fruit; but that must exist in embryo before commencing to force.—G. ABBEY.

WARDIE LODGE,

THE RESIDENCE OF MISS HOPE.

THIS beautiful suburban residence is situated upon an eminence overlooking the Firth of Forth, about two miles distant from Edinburgh. The mansion is a commodious structure of Grecian architecture; and from the principal windows a magnificent panoramic view is obtained of the noble estuary of the Forth, stretching like a gigantic mirror for several miles to the west, and reflecting from its glassy surface the image of many a smiling town, and village, and mansion, on its northern banks, as well as of the fertile fields and varied park and woodland scenery along its southern shore, receding behind the undulating and varied country that lies beyond, until obscured in the shadowy outline of the Ochil Hills.

The grounds around the mansion are about four acres in extent, and are laid out in a style well suited to the rich landscape with which they are brought in contrast. Running the entire length of the western boundary, which descends with a steep incline towards the sea, is a broad belt of trees serving the double purpose of shelter and ornament, and through which flows a small stream of water, leaping onward with increasing speed as it nears the sea. This has been converted into what may be called a sub-alpine garden, which in summer forms a pleasing relief from the flower garden; here are introduced nearly all the native plants usually found in similar situations, as well as exotics of a kindred nature, and so carefully and tastefully are they disposed that one is almost constrained to believe that they have been placed there by the hand of nature. At the bottom of this incline, and forming the northern boundary, is a border devoted exclusively to the cultivation of herbaceous plants, for the purpose of testing their ornamental qualities, or uses

in floral decoration. As soon as any member of this group is found worthy of a better position it is removed to the mixed flower-border in another part of the garden.

Ascending towards the flower garden the first landing is upon a finely-shaven lawn to the west of the house, margined by a semicircular border about 8 feet wide, which is set apart for the cultivation of hardy plants with ornamental foliage, and backed by scarlet Pentstemons, of which a variety called *Aurora* is the most effective. Here are arranged with strict regard to ornament every variegated and silvery-looking plant procurable, interspersed with crimson *Plantago* and other dark-foliaged plants, forming a combination at once striking and effective.

On entering the flower garden there is a magnificent border extending nearly 60 yards to the right, at the back of which runs a low wall covered with a rare and valuable collection of trellis plants. The border is about 10 feet wide, and contains an admirable collection of the most ornamental herbaceous plants, intermixed with China and Tea Roses; dwarf Dahlias, and a great variety of other half-hardy plants being also introduced in their season.

The successful arrangement of this border to produce the effect which it maintains for several months every year must be a matter of no small ingenuity, and proves what may be accomplished by a thorough devotion to the pleasures of a garden, and the cultivation of artistic taste. The effect of nearly all the attempts that I have hitherto seen in that way proved the very reverse of Miss Hope's, making one truly thankful to fall back on the "Red, White, and Blue"—namely, *Cerastium*, *Lobelia*, and *Tom Thumbs*, with which the gardening world has now become familiar, and which are so acceptable in the present day because they do not vex us with the study of scientific names, and their harmonious blendings can be acquired as easily as the rule of three.

I observed on my last visit that this border had recently been enriched with several patches of that handsomest of all winter-blooming plants which I shall here take the liberty of calling *Helleborus niger* var. *grandiflora*. The history of the plant I at present fail to remember, but it either originated or was introduced by some one in the neighbourhood of Edinburgh, and is yet chiefly confined to that locality. All the so-called varieties that I have procured from different parts of the country are only slight variations of the ordinary Christmas Rose; whereas the plant in question is double its size both in foliage and flowers, blooms fully six weeks earlier, and instead of the peduncle being one-flowered as is mostly the habit of the Christmas Rose, it produces four or five on a stem, of a rosy bluish colour, and is in perfection during November.

Ascending to a terrace and passing by the greenhouse and stoves, which are rich in Ferns and ornamental-foliaged plants, we arrive at that portion of the garden allotted to the exhibition of bedding plants, which is neatly laid out in grass, and contains upwards of twenty figures. This has for several years been one of the most attractive and best-arranged flower gardens in the neighbourhood of Edinburgh. I have annually paid a visit to this lovely spot when arrayed in its summer beauty, but having read and heard much of a novel method of filling these beds in winter with German *Greens* of various colours, whereby a very striking effect was produced, I resolved, as I confess I had my own doubts regarding this association, to visit the place and judge for myself. Although arriving a little after daybreak in rather a wintry morning towards the end of January, I had the good fortune to be conducted through this portion of the garden by its active and intelligent proprietress, who kindly pointed out every object of interest, detailing the system of management with scientific and business-like precision. My first impression almost led me to believe that the beds were a series of beautiful rockwork formed of branching coral of appropriate colours, and even upon a more minute inspection I failed to realise almost any affinity between the vegetable so employed and that used for culinary purposes. It seems to be the variety known to botanists as *Brassica oleracea* prolifera, which, to use a common phrase, is tough and leathery in texture, rugged and artistical in outline, and dwarf and uniform in habit. The colours chiefly predominating are crimson and mauve; dark purple, white, and sulphur, tipped with green. These are arranged in rings

and panels in the usual way, the centre of the beds being generally filled with some pretty dwarf Conifer; and the margins as well as the divisions of the panels are composed of variegated tree Ivy, *Stachys lanata*, *Cerastium tomentosum*, *Arabis albida* variegata, *A. mollis* variegata, *A. lucida* variegata, and the like. The result is, that the garden, even at this gloomy season, is as brilliant in colouring and as rich and effective in display as at any period in the summer or autumn. Miss Hope had these beds planted for several years with ornamental shrubs, hardy Heaths, bulbs, and other spring flowers at a great expense; but she found that from the beginning of November to the end of February, although the garden might be said to be clothed, it was truly a winter garden after all. She therefore resolved to use every endeavour to find out something that would give the beds a summer dress even in the bleakest season. Having discovered what she considered a suitable subject, and for which in the meantime I fear we can find no substitute, she has, by careful cultivation and judicious selection, brought her place to such perfection as has lately received the commendations of the best authorities.

I left much pleased with all that I had seen, and impressed more forcibly than before with the truths of the preacher and the poet, that "We live but to learn," and "gather as we go."—JAMES RAE.

GLAZING WITHOUT PUTTY.

HAD Mr. Poynter used narrow strips of india-rubber the whole length of the rafter beneath the glass, and four screws with india-rubber collars to fasten each square to the rafter, he would not have found glazing without putty so difficult nor so ineffectual; and had he run a groove in the centre of each rafter between the squares of glass, he would not have found any ill-effects arising from rain.—WILLIAM McLELLAN, *Wemyss Castle, Fife*.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

EPIDENDRUM DICHROMUM var. *AMABILE* (Beautiful Two-coloured Epidendrum).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. Found on branches of shrubs near rivers in Bahia. Imported by Messrs. Low & Co., Clapton Nursery. Flowers rose-coloured, but liable to vary to white.—(*Bot. Mag.*, t. 5491.)

MORENIA FRAGRANS (Fragrant Morenia).—*Nat. ord.*, Palmæ. *Linn.*, Dioecia Hexandria. A small Palm, native of Peru, Columbia, and elsewhere in South America.—(*Ibid.*, t. 5492.)

AGAVE SAUNDERSII (Mr. Saunders's Agave).—*Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia. Probably a native of Mexico. Flowers yellowish green.—(*Ibid.*, t. 5493.)

CELOGYNE FUSCESCENS var. *BRUNNEA* (Reddish-brown Cologyne).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. Native of Moulmein. Re-introduced by Messrs. Low & Co. "It flowers in the winter months, and continues in beauty for several weeks. It is amongst the best of the Cologynes."—(*Ibid.*, t. 5494.)

MANETTIA MICANS (Showy Manettia).—*Nat. ord.*, Rubiaceæ. *Linn.*, Tetrandria Monogynia. Messrs. Veitch and Son, King's Road, Chelsea, have it from their collector in South America, Mr. Pearce, who found it at Muna, at an elevation of 3000 to 4000 feet. Stove climber; flowers orange red.—(*Ibid.*, t. 5495.)

ARISEMA PAPILLOSUM (Papillose Arisema).—*Nat. ord.*, Aroidæ. *Linn.*, Monœcia Monandria. Native of the Nilgherry Mountains, and of central Ceylon, at an elevation of 4000 to 6000 feet. "The large tuberous roots are used as a medicine by the Cingalese, and sometimes called 'Snake-root.'"—(*Ibid.*, t. 5496.)

ROSE—*Bernard Paliss.*. Raised by M. Margottin, Bourglareine, near Paris. Colour reddish carmine, habit excellent.—(*Floral Mag.*, pl. 229.)

PETUNIAS.—*Jubilee*, rosy-lilac, barred and veined with dark maroon. Charming, white with purplish maroon bars and veins. Raised by Mr. Bull, Chelsea.—(*Ibid.*, pl. 230.)

AZALEA—*Fascination*. Raised by Mr. Ivery, Dorking, and

has won a first-class certificate from the Royal Botanic Society. The female parent was *A. tricolor*, and the male *A. Criterion*. Colour light rose, irregularly banded at the edge with white; upper petals spotted in the centre with crimson.—(*Ibid.*, pl. 231.)

FUCHSIAS.—*Lucrezia Borgia*, raised by E. Banks, Esq., Sholden. Sepals crimson, well reflexed; petals purple, blotched with red. The Floral Committee of the Royal Horticultural Society gave it a certificate. *Fantastic*, raised by Mr. G. Smith. Sepals crimson, reflexed; petals, lavender purple, instead of being pendant spread nearly horizontally, and beneath them a second corolla with petals pendant as usual.—(*Ibid.*, pl. 232.)

VERBENA.—*Annie*. Raised by Mr. Cooling, of Bath, and awarded a first-class certificate by the Floral Committee of the Royal Horticultural Society. "In our opinion it is the best striped Verbena we have yet obtained, the habit being healthy, the trusses both abundant and good, and the colour pleasing and attractive. It is a bluish white at the margin with a broad wedge-shaped stripe of carmine in the centre of each segment. The marking is, in fact, analogous to that of *Striata perfecta*, only in a different colour."—(*Florist and Pomologist*, iv., 17.)

ROSE CELINE FORESTIER.

THERE is at page 110 of your Journal this question—"Have any of your readers experienced this result with regard to that excellent yellow Rose Celine Forestier—when grown on a wall it will not flower, or at any rate will flower very sparingly?" Yes; I have experienced that result. The cure is to root-prune in place, or remove and root-prune. I removed mine and root-pruned, and the trees have ever since flowered well. It must never be cut hard at the head if removed; after re-establishment merely cut to a good eye at the top of the matured shoots. It and *Mdlle. Aristide* require less cutting than other Tea Noisettes. None of them want much cutting. Celine Forestier will flower well also, if, planted in a circular bed, it is twisted like a snake and pegged down.—W. F. RADCLIFFE, *Tarrant Rush-ton, Blandford*.

NOTES FROM THE SHORES OF THE MEDITERRANEAN.

As one of your oldest correspondents at home I now venture to convert myself into your foreign correspondent, and as chance has afforded me an opportunity of visiting in this and the following month many gardens and markets in ports of the Mediterranean, I will send for the amusement of your readers a few notes on the flowers, fruits, and vegetables seen at each place.

We arrived at Gibraltar on the 28th of January, and on landing took a stroll into the Alameda or public garden. We were delighted to find a most beautiful display of flowers growing most luxuriantly without any attempt being made at effect by bedding out. Scarlet Geraniums, 3 or 4 feet high, were growing as permanent plants amongst Aloes, many of them displaying their graceful flower-stems with buds; the Almond tree flowers were just opening, and *Tritonia aurea* appeared to be quite at home and to have spread freely amongst the other plants. A lilac-coloured trailing *Fumaria* (?) was also very showy; the Prickly Pears were at rest; whilst the yellow *Cytisus* and abundance of a small white Jonquil, with a most disagreeable scent, formed a pleasing contrast to the Scarlet Geraniums, mixed with the tropical foliage of the Palm trees. We were pleased to notice that several new plants had recently been put in—*Cupressus Lambertiana*, and, we thought, *Wellingtonia gigantea*, with several plants of, what we thought to be, the Castor-Oil tree, but which, whatever tropical plant it was, appeared to require protection. We did not notice amongst the wild plants and weeds any thing that could not be found at home.

We visited the market at 7 A.M., and found a most lively scene, the place being crowded with Moors in their characteristic dress, and Spanish peasantry with their decorated robes and asses laden with vegetables, fruit, and poultry. The stalls were well filled with Oranges, both common and

the small Tangiers; Lemons very fine; but not any Limes nor Grapes. Shaddocks were small, Walnuts large, other Nuts small and poor. Sugar-Cane was also on sale, but poor and unripe. The vegetables were very good and abundant—splendid Broccoli, large Lettuces, Radishes very large, but exceedingly tender and well grown, Endives well blanched, fine-sized fresh-grown Carrots, Turnips, Parsnips, Onions, and Leeks. There were some Peas, but with small and ill-filled pods, and a few handfuls of poor Asparagus. Of dried fruits Figs in various ways, Cherries, Chestnuts without husks and peel, were offered in casks for cooking purposes; also Olives green and black, and we need hardly say that Garlic was also there in abundance. We must not forget to mention the Yams, of which there were two varieties, and new Potatoes of a fair size. Jerusalem Artichokes were abundant, but very poor in quality. The cut flowers were Roses, Stocks, Geraniums, Heliotropes, and abundance of the single Roman Narcissus.

We took a peep at the poultry, but searched in vain for the well-known white-faced Spanish fowl. Strange to say we could not find the smallest trace of that breed; but the birds appeared to be fair ordinary cross-breeds, evidently with a strong cross of the plump, round top-knotted Polish form. Hares, snipe, and quail were the only game on sale; and amongst the butchers' stalls kid appeared the only novelty.

The fish on sale were small and poor, but some of them of queer unknown forms—eels, soles, red and grey mullet, bonetas, ink fish, bream, or rather a fish very like it, sardines, shrimps, and oysters.

Outside the market we found droves of she-goats, and were much amused to see them being milked at each customer's door as required; evidently a very excellent mode of securing an abundant supply of the pure article without the assistance of the iron-tailed cow, so well known at home.—CCELEBS.

COTTON SEEDS.

SINCE I last wrote I have received from Isaac Watts, Esq., Hon. Sec. to the Cotton Supply Association, six samples of the following kinds—viz., Sea Island, Orleans, Peruvian, Egyptian, Guayaquil, and Carthageana, with an intimation that I may have more if wanted. I have now in my possession as much as would serve about forty. If any more is wanted I will get it. I forgot to say in my last that the young plants should be carefully repotted, as they fill the pots with roots.—JOHN HAGUE, 36, Mount Street, Ashton-under-Lyne.

GISHURST COMPOUND VERSUS SCALE.

IN continuation of your answer to "READER," in last week's Journal, perhaps I may be allowed to say, that where orchard-house or wall trees have been much infested with mussel scale we have found Gishurst to be most efficacious when applied without more water than necessary to make a thick lather with a painter's brush on the top of the cake in the box, this lather to be well painted over the stems and all parts where the scale is observed, but avoiding the buds. In November, 1863, I described in this Journal an experiment made on some old wall trees so blighted year after year as not to bear at all, that a first year's application to some of the trees had led to some fruit and a comparatively healthy appearance of the wood, and that all the trees were to be subjected to a strong Gishurst treatment, the result of which I would communicate. I may now state that, with this second year's application (eight ounces to the gallon), all the trees bore some fine fruit, some of them fair crops (trees which for at least eight years had not ripened fruit), and that the quantity of fruit-buds and healthy appearance of the wood give great promise for this year. About a month ago we washed them again with 8 ounces to the gallon, with the exception of one Pear tree which had, we believe, never been previously treated, and which was in some parts of its branches and twigs entirely coated with mussel scale, to this we have applied lather from the box as above described. With your permission I will hereafter describe the result.—G. W.

WORK FOR THE WEEK.

KITCHEN GARDEN.

As soon as the ground becomes mellow let all the crops coming on have a thorough hoeing or surface-stirring. This is of the utmost importance at this period, but should not be done until the ground is somewhat dry. *Asparagus*, in mild weather, that in frames or pits should have abundance of air after the shoots have made their appearance. Prepare ground for permanent beds. If the soil works well, plenty of good rotten stable manure should be used in their formation. *Carrots*, a little seed of the Early Horn may now be sown on a sheltered warm border when the soil is dry and works freely. Those in frames should be thinned when an inch or two high. *Horseradish*, prepare the ground for planting, dig it two spits deep. No manure should be dug in unless the ground is very poor. *Jerusalem Artichokes* may now be planted. *Onions*, plant those bulbs of last year which begin to grow. This will be found very useful where there is a scarcity of sound ones. They may also be planted for seed. *Parsley*, a sowing should be made as soon as the ground is in a fit state to receive the seed. *Peas*, make a sowing of Knight's Dwarf Marrow; at the same time, to keep up a succession, two or three crops must be sown of those sorts which come in for use quickly, to be ready before the Marrows. *Potatoes*, plant some on a warm sheltered border if the weather is mild and favourable. *Spinach*, a few rows may be sown between the early *Peas*, if there is a scarcity of the autumn-sown.

FRUIT GARDEN.

Clear away the dead leaves from Strawberry plants, and remove superfluous runners from the Alpine Strawberry. All should not be removed, as the runners generally bear better than the old plants. Look to the Fig trees, prune and train those that require it, tying and bending the strong shoots down, which will induce them to push out a number of very short-jointed bearing shoots.

FLOWER GARDEN.

Well-grown annuals contribute much to the gaiety of the garden; and although not quite so well adapted for masses as some of our half-hardy plants, they are very eligible for borders and mixed beds. They are frequently treated with too much kindness, sown in soil of too rich a character, and, of course, run too much to leaf. We would advise all those who have the means to devote two little frames to their especial cultivation at this period, the one with bottom heat, the other without it. That with bottom heat would be better with a plunging material possessing a heat of 70°, the pots placed close to the clear glass roof, and matted up at night. The other frame, without bottom heat, should be raised about a foot above the ground level, where water cannot possibly stand, and should be filled to within a foot of the glass with cinder ashes. They should both be well watered with boiling water to destroy all insects previous to placing the pots. The tender and half-hardy kinds must be raised in the frame with heat, managing the sowings so as to afford a succession according to the period at which they are required to bloom. The hardy kinds, however, will have to be removed to the cold frame as soon as an inch high; they would then harden off in a couple of weeks, and be ready for turning out in the borders. The tender annuals, if drawing in the warm frame, might be removed to warm and light shelves in the greenhouse or other structures. The soil for hardy annuals should be chiefly plain loam; this will be found to produce sturdier plants than rich vegetable matters, and much blossom in proportion to the amount of foliage. As soon as the frost is out of ground, and the surface in a fit state to rake, the beds for planting *Ranunculuses* must be brought to a perfect level. It is a very important object to insure success in the cultivation of this flower that the roots be placed no deeper than 1½ inch. Should they be either deeper or more shallow a new and smaller root is formed at this depth, to the serious injury of the plant. The distance between the rows should be 6 inches. A little rockwork, made to hide unsightly objects or to harmonise with others, may be introduced with advantage in many places, and planted with many of the common hardy plants, such as Wallflowers, Indian Pinks, *Aubrietia purpurea*, *Alyssum saxatile*, *Cerastium tomentosum*, *Ferns*, *Fragarias*, *Geum coccineum*—some to be disposed in the

recesses, and others in the more prominent parts according to their natural habits of growing in sunshine or shade.

GREENHOUSE AND CONSERVATORY.

Scarlet and other *Pelargoniums* that were taken up from the beds in the autumn to be placed in heat to start them into growth. *Acacia*, *Mimosa*, *Gnidia*, *Diosma*, *Boronia*, *Pultenaea*, *Epacris*, and other such plants should be regularly examined to clear them of all dirt, to scrape off any moss, &c., that may have grown on the surface of the mould, and to surface them with a little fresh soil; and any plants that have grown with a loose habit to be tied up. In severe weather, such as we are experiencing, when it is absolutely necessary to keep fires both day and night, the soil in the pots near the pipes or fines is soon dried up, and frequent waterings are necessary; the water to be kept in the house during the night, and given to the plants in the morning. Be careful not to let things in bloom suffer for want of water, giving weak liquid manure to *Salvias*, *Camellias*, &c., and use every means to preserve the beauty of specimens in bloom as long as possible. Let all the plants be tied with the least possible delay; for it is difficult to tie a plant so as not to look somewhat stiff, formal, and therefore unnatural, and the sooner all this description of work is done the better specimens will look when in bloom late in the season. No time should be lost in arranging, cleaning, and pruning the plants occupying the borders of the conservatory. When the health, or habit, or other considerations, render it desirable that the season of blooming should be retarded, pruning may be performed later. *Pot Verbenas* to supply cuttings; *Heliotropes* may also be placed in heat for the same purpose. *Fuchsias* should be set to work, and cuttings obtained as soon as the shoots are sufficiently forward.

STOVE.

Increase atmospheric moisture in proportion to heat and light. Look sharp after insects; the snails are very fond of the young buds of Orchids, at this period undergoing a sort of malting process. Some early *Achimenes*, *Gloxinias*, &c., must be set to work. Some of the *Ipomoeas*, *Echites*, *Pergularias*, the *Stephanotis*, &c., may be trimmed in, disrooted if necessary, and plunged in a moderate bottom heat, using but little water until root-action commences. Some of the *Echites* are easily rooted in this way, and will endure a vast amount of drought. A small hotbed, as advised last week, is most useful to receive fresh-potted plants and to excite others into growth from which it is desirable to obtain cuttings; it is also a very suitable place for striking cuttings of *Verbenas*, &c.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Out of doors did nothing but trench and turn over ridged-up ground, so as to sweeten it by exposure to the frost, the best of all pulverisers of stiff soil. The rougher this turning over ridges the better, in order that the frosty air may have more surface on which to act, and thus far we agree with our observing correspondent, "WYRESIDE," page 111. But in trenching and ridging-up very stiff clayey soil for the first time, we would, on the other hand, not care about leaving it so rough when frost was expected. In these circumstances we have admired first-rate workmen, as we used to feel a pride in doing in our younger days, turning in the top spit in small spadefulls, or breaking it if in large ones, and then placing the last and deepest spit as high and angular-ridged as possible, both sides of the ridge shining in the sun with the spade marks, and no attempt made to pulverise or remove these. On these shining, smooth, compact spadefuls or lumps, the frost exercised a penetrating and crumbling power, which it could not have done if they had been left in smaller, detached, and broken-up pieces. Just so in the case of other materials, the more solid and compact any body is left, the more in general will it be influenced by heat or by cold.

Over and over again, we have noticed the same thing in stiff land ploughed up early, and left to be acted on by the frosts of winter. In many such cases the frost proved a more efficient pulveriser than all the improved cultivators, and clod-crushers. The whole matter wants ventilation,

however, as many mistakes are made from thinking that merely opening the surface of the soil to air, is synonymous with letting the heat of the summer in. The very reverse is the case, as we have proved over and over again by thermometers placed in the soil, the soil beneath a hard gravel walk being warmer in summer than similar soil at similar depths under soil nicely pulverised and turned at the surface. Of course, in winter, the circumstances were reversed. When we surface-stir, and fork over borders in summer, we would like it to be clearly understood, that it is done for other purposes than giving an increased temperature to the border, as that, and watering, too, unless with heated water, will lower the temperature. We must thus often lower the temperature, even when we wish to raise it.

Partly on this account we would wish to direct prominent attention to the article of Mr. Fowler, page 125, on the aëration of borders. It will be observed that he increases the heat of the border by letting the warm air of the day circulate through it and beneath it, not by breaking up the surface. Were we in a position to do new work, we certainly would keep such an article in mind. It may, perhaps, be recollected that the most wonderful produce of the Barbarossa Grape, at the Under-Secretary's in the Phoenix Park, Dublin, was from a Vine growing in a border aërated very much as Mr. Fowler describes.

With regard to the last sentence of the Editors' answer to "WYSSIDE," page 111, beginning thus—"Consolidating the earth over the roots of fruit trees is one of the most fatal of practices," with all due respect we have a suspicion that there are two sides to the question here. We have seen Apricots gathered from trees (and the whole of the space in which the roots grew was either paved, pitched over, or hard-gravelled over), such as we have never seen beaten from a border with its surface nicely loosened. There generally was a space of 18 or 24 inches square left exposed at the bole of the tree, on which a pail of soapsuds could be poured in summer; but even without that we have known such trees produce heavily for many years, when all they could obtain in the way of humidity must have chiefly been from absorbing the moisture from the surrounding soil, rather than that from the soil in which the roots were placed. Similar circumstances have been related by Mr. Beaton and others, and we think also by ourselves. We presume the great fruitfulness in such cases was owing to the thorough perfecting of the wood, and the greater heat that the ground obtained from the solid compact surface over the roots. Such facts, which may often be noticed, have led us to the conclusion that, in the case of some hardy but rather tender fruit's, which seldom do well in cold situations, they should have a trial by planting and training them thinly on a bank sloping to the south, the surface of the bank being made firm by concreting or tarring, and merely openings left in the soil for giving water when deemed necessary. If the borders should be aërated according to Mr. Fowler's plan so much the better, but we anticipate great results alike from the absorption, conduction, and reflection of heat. Would some of our young experimentalists give the matter a fair trial? Many are trying their success with Mr. Rivers's curate's vinery. When once the Vines are established let it be tried what flagging or concreting the surface would do, instead of the slates, which, if loose, keep the heat from the ground. Of course holes could be left for watering. We shall have some faith in firm surfaces absorbing, conducting, and reflecting heat, until the whole idea has been proved wrong, and we make a present of it to our young friends to try and experimentalise on a small scale, and then report results. Right or wrong, we have grounded many of our practical advices on such observed facts, such as counselling the firm packing of soil in pots for fruiting plants, and the attempt at least to establish the axioms "If you wish plants to grow freely, keep the soil open; if you wish them to flower or fruit freely, keep the soil firm." At the same time no theory should be ridden too hard, and there are plenty of hardy orchard trees to which the remarks of our Editors too thoroughly apply; but we have been alluding to fruit plants rather too tender for our northern climate, and where sun-heat must be made the most of as an element of success.

Dwarf Kidney Beans.—Potted-off a lot, and sowed more where there was a little heat for them. After this season's work and some under glass will be sown, and the

contest will be between the useful and the ornamental. The above mode of transplanting is chiefly to be commended for saving room, otherwise it would be less trouble and labour to sow at once in pots or in beds, where they were designed to perfect their produce. Wherever the cramming system under glass has to be resorted to, making the most of space is always attended with much additional labour. For instance: these moveable boxes of Beans may be sown anywhere under shelves or stages, where there is a heat approaching 60°. As soon as the Beans are up they must be placed in a position where there is light, to prevent them being drawn; and as soon as the stem appears—that is, when three leaves appear above the seed leaves—the plants should be turned into pots, say at this season five plants into an eight-inch pot, using rich light soil that has previously been warmed. These pots may also stand close together until the plants begin to incommode each other, when they must be thinned to perfect their produce; most room being needed just when the plants are in bloom. By this means much room is saved until the plants approach their full growth, but the labour is much increased. Just think of the difference between sowing at once in pots and in a bed of earth, and doing nothing more except watering and a little syringing until the crop is gathered; but then, thus to save labour, much space and heating under glass are required. We have several times grown them economically in a pit of six lights by sowing at once in the soil. The six lights made three successions—sown at intervals of three weeks. The seeds were placed in rows 2 feet apart, and when well above ground were earthed up, so as to leave a trench between them. When the first two lights came into a bearing state, and had produced a little, seeds were sown in the trench, and by the time they were up and needed more room the first crop was removed, and so on with the second and third division, adding a little leaf mould to the second and third-crop sowing in the trench, before earthing up with the soil in which the first crop grew. We have had four successions in the same place by using manure water and a little fresh soil to every crop. Thus in six lights we have had from nine to twelve successions. It required a little calculation to make sure of the succession crop being up and needing more room as the first crop was becoming exhausted. Sometimes, to continue the bearing as long as possible and yet to give room to the succession crop, we have pruned the wasted parts, cut off the older leaves, or run a string along each side of the rows to confine them until the fruit was obtained.

This successional plan we found more profitable than any doctoring of the old plants, so as to keep them on in a bearing state. After May and June, if well treated with rich soil and manure waterings, and closely picked, the same plants will produce until frost destroy them; but earlier, and kept constantly under glass, the plants do not produce alike continuously and profitably. Growing such in pits is generally better than placing them in forcing-houses, especially after April, as after that time, if there is a thrips about the place it will find its way to the Kidney Beans. In fact, it is no bad plan to place a few plants in a vinery or Peach-house as a sort of bait; for if no thrips appear on a Kidney Bean you may rest pretty certain that you have none in the house. If they do appear the Beans should be taken out, carrying the plant out as carefully as possible, so that not a single insect should be shaken off. Whether in pits or houses, syringing with clear soot water is a good thing for keeping them clean. When they do become infested, the washing and smoking that would be necessary to clean them would cost as much as the produce would be worth. The most economical plan would be to take the bulk of the produce, clean the place, lime and sulphur-wash all the walls and woodwork, and smoke with a little burning sulphur, taking care that the fumes have access to nothing that has life, or if the plants should be deciduous, that the buds are dormant and the wood well ripened.

We are thus particular as to these Beans, as we believe that when grown under glass the produce has a sweetness and tenderness peculiarly their own. There is little difference in the dwarf kinds, but in general those that produce clean, not mottled, pods are the most liked, though some of the latter are equally juicy and sweet. The small Newington, when the pods are gathered about 2 inches or

rather less in length, are very nice when cooked whole. The flavour of the Bean is thus better secured than when the pods are cut up or whittled into little morsels. These and other vegetables are often sadly spoiled. The last time we sat at a public dinner party the sight of the vegetables was more than enough. What had been good Beans looked as if they had been sweltering for a fortnight in the sun on the top of a rubbish-heap. Soft boiling water and a little dash of carbonate of soda, with even common attention, would have made all the difference between the enticing and the revolting.

Other matters in the kitchen garden and fruit garden much the same as in previous weeks, as the frost has prevented much being done. In the orchard-house, proceeded with painting the trees and whitewashing the wall, or rather, thinly covering it, the wash being fresh lime dulled with blueblack, and a good portion of flowers of sulphur. We have not washed the wall much after syringing well with the warm water, and will, therefore, put on the finishing wash of lime and sulphur rather thin, so as to fill up any holes that may be left. Last season, in July, we found a trace of spider, and on washing open parts of the wall with sulphur and soft soap water, we soon got rid of them by shutting up early when the sun was in the house.

ORNAMENTAL DEPARTMENT.

Went on potting, &c., as in previous weeks. The frost being sharp, protection gave us but little trouble, as we allowed it to remain night and day, except in the case of Cucumbers, Potatoes, Strawberries, &c., in heat. In such dull frosty weather, this gives a great relief where much is done in the way of covering and protection. Having nothing very particular to record, we would give a few words to our friends, the window gardeners, taking a number of matters in a random way.

Old Scarlet Geraniums Rotting.—"ALPHA" says she crammed some boxes in the faggot-style as we recommended, and put them in a spare room without fire, watered them at Christmas, and what with frost and damp they are rotting." Very sorry; such plants should have been packed firmly in soil, either dampish, or made so by watering, and then covered on the surface with an inch or two of dry soil. When frost set in, the plants and the box should have been covered either with cloths or a little dry hay. Watering should have been let alone until the plants began to break. In a cold place we are satisfied if they thus break in March—that will be time enough.

Scarlet Geraniums for the Window.—No plan tried beats Mr. Beaton's Harry Moore's. Supposing the box to be filled for 1865:—Let the plants become rather dry after September, pick off the leaves before the end of October, and take the boxes to a spare room, or garret, before the plants are touched with frost; protect them from frost when it comes; uncover, and keep near the light in fine weather. In March, as they break, prune away any dead points and irregular bits, and give a little water, not by drenching the box, but by making little holes with a pointed stick about 6 inches apart, and filling these with water in the first place. By the time the new leaves are as large as a shilling, scrape off a lot of the surface soil, stir up the rest a little, water with water about 60° if needed, then top dress with fibry loam and old cowdung, or any other rotten manure, and water afterwards as needed, keeping the boxes inside until the 20th of May. The less the plants have grown before that time, provided they are healthy, the more abundantly will they bloom, and the better will the wood be ripened for another year. We see no reason why a Geranium-box should not thus continue with the same plants, and never removing them, to go on blooming every summer for the space of twenty or even thirty years. Such plants are much easier kept in winter than those with luxuriant growth taken up out of flower-beds, the free-blooming and little growing of such plants in pots and boxes, are what enabled them to be so easily kept in a garret, spare room, or dry cellar. We have known such boxes placed in a hay-loft, a little hay shaken over them in December, and remaining untouched until March, when the young buds were breaking, and then they were allowed some light in fine days. They will thrive all the better if few of the largest leaves are not more than the size of a florin when placed outside the window in May.

Fuchsias Dropping their Flowers.—"OMEGA" tells us that her Fuchsias all dropped their bloom inside of the window

last summer. This was owing either to want of air or want of water; most likely they would have done as well outside the window for a time. We have known Fuchsias drop their flowers and seem damp enough, and even the pot when struck emitted a heavy sound, and yet, except at the outsides of the balls, such plants were dry. When holes were made in the centre of the ball with a pointed stick, and then watered, or the pot was submerged in a pail of water for ten minutes, the blooms opened and kept on well enough. The plants had either been shifted when the roots were dry, or the fresh soil added had been left rather loose, and the water applied escaped by the loose soil.

Repotting.—A great many window gardeners lose their plants, or render them unhealthy, by shifting them with the soil of the old plants dry. It is next to impossible ever to make the old ball and the new soil fraternise in such circumstances, and the water given is repelled from the old ball as by a duck's wing. Hence, in potting, the importance at this season of adopting one of two methods.

First. Here is a nice Geranium or Pelargonium in a four-inch pot, the roots filling the pot nicely. Well, as it is desirable to grow it on with little check, the pot is well watered some hours before shifting, the outside ball is gently ruffled, and the roots disengaged before the ball is transferred to aerated heated soil in a six-inch pot, the soil being packed rather firm. In such a case, if the soil is rather moist, no water will be required for a time, except where the old ball and the new soil touch each other.

Secondly. Here is a little Fuchsia in a small pot growing slowly all the winter, and the pot now full of roots. Well, treat it in the same manner; but

Thirdly. Here is a large Fuchsia in a large pot. We have pruned it a little, and we are more anxious that the plant should be a mass of bloom, than that it should become more luxuriant, or larger than usual. Well, we shall suppose that the pot is standing on the damp floor of a cellar, in which case it would need no water all the winter. If it stood in a dry garret, it might need a little, unless it was plunged in some damp material. Now, if the plant is pretty vigorous, it may thrive well in a window for several years, if top dressed like the boxes of Geraniums. If becoming a little weakly, it is best to give it fresh soil in the same space of feeding-room—that is, in the same pot, or the same sized pot. To secure dampness of the roots in this case, the best plan is to shake the most of the dry earth away, dip the roots for ten minutes in water at 60°, let them drain a little, and repot in rich light loam, pretty well consolidated. By this plan little water will be needed until the plant is growing away freely, and providing the fresh soil is just moist, the fresh roots will run into it all the more kindly from not being deluged with water.

Let us here repeat, that next to cleanliness, nicely aerated warm soil for spring-shifting is a matter of great importance.

Bulbs now showing for bloom, and in bloom, should have all the light possible, and when dry will relish a little clear manure water. Hyacinths in glasses will be benefited by two or three bits of charcoal in the glasses; but for the sake of observing the rooting process, there is no great pleasure in seeing these glasses in rooms, though they are more elegant than the general run of pots. The best plan is to grow them in pots, and keep these out of sight, by plunging or planting in an elegant vase or basket. Flowering plants may be transferred from pots to glasses, by holding the ball from a pot in your hands in a pail of water, washing away the earth, and then placing the roots in the glasses. When in bloom, or nearly so, such plants may be moved to the middle of the room, or even the mantelpiece on a cold frosty night, but during the day they should have all the light possible. Some time ago we saw in a fine day what ought to have been a noble row of Hyacinths on the mantel-shelf of the sitting-room. It was something like transferring the worthy owners to the black hole of Calcutta.

—E. F.

TRADE CATALOGUES RECEIVED.

Lamoureux, Clark, & Co., Plymouth.—General Price Current and Garden Directory.

William Davidson, 30a, St. Andrew Square, Edinburgh.—Select List of Seeds, Plants, and Implements.

John Salter, Versailles Nursery, William Street, Hammersmith.—*Catalogue of Chrysanthemums, Dahlias, Peonies, Phloxes, Variegated Plants, &c.*

E. G. Henderson & Son, Wellington Road, St. John's Wood, London.—*Catalogue of Flower, Vegetable, and Agricultural Seeds.*

COVENT GARDEN MARKET.—FEBRUARY 18.

The supply of out-door produce is very short in consequence of the severe weather. Pines continue scarce; hothouse Grapes are more than sufficient for the demand. The usual continental supplies are well kept up, and include some very good Cabbage Lettuces, Savoys, Brussels Sprouts, &c., are not over-plentiful, and have advanced considerably in price. New Potatoes are bringing from 14s. to 12s. per pound; of others there is still a good supply.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	2	0	to 4	0	0	0	0
Apricots.....	dox.	0	0	0	0	0	0	0	0
Cherries.....	lb.	0	0	0	0	0	0	0	0
Chestnuts.....	bush.	14	0	20	0	0	0	0	0
Currants, Red...½	sieve	0	0	0	0	0	0	0	0
Black.....	do.	0	0	0	0	0	0	0	0
Figs.....	dox.	0	0	0	0	0	0	0	0
Filberts.....	100 lbs.	40	0	0	0	0	0	0	0
Cobs.....	do.	50	0	60	0	0	0	0	0
Gooseberries...½	sieve	0	0	0	0	0	0	0	0
Grapes, Hamburgs lb	7	0	12	0	0	0	0	0	0
Muscats.....	8	0	14	0	0	0	0	0	0
Lemons.....	100	5	0	10	0	0	0	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	each	0	0	to 0	0	0	0	0	0
Asparagus.....	bundle	10	0	15	0	0	0	0	0
Beans Broad.....	½ sieve	0	0	0	0	0	0	0	0
Kidney.....	100	2	6	5	0	0	0	0	0
Beet, Red.....	dox.	1	0	3	0	0	0	0	0
Broccoli.....	bundle	2	0	3	0	0	0	0	0
Brussels Sprouts	½ sieve	3	0	4	0	0	0	0	0
Cabbage.....	dox.	1	6	3	0	0	0	0	0
Capelcums.....	100	0	0	0	0	0	0	0	0
Carrots.....	bundle	0	7	0	10	0	0	0	0
Cauliflower.....	dox.	2	0	6	0	0	0	0	0
Celery.....	bundle	2	0	3	0	0	0	0	0
Cucumbers.....	each	2	0	5	0	0	0	0	0
Endive.....	score	2	6	3	0	0	0	0	0
Fennel.....	bundle	0	3	0	0	0	0	0	0
Garlic and Shallots	lb.	0	8	0	0	0	0	0	0
Herbs.....	bundle	3	0	0	0	0	0	0	0
Horseradish... bundle	2	6	4	0	0	0	0	0	0

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

EARLY KING POTATO.—It has been in my possession two years. It is not strictly a round Potato, as "E.W." terms it, as both round and kidney-shaped tubers are frequently to be found attached to the same plant. It is not a first early, but a good second early on our light soil. It is a very handsome Potato, an excellent cropper, and has a smooth yellow skin with very few eyes. For exhibition purposes I know of no round Potato to match it, but it requires a good breadth to pick from for the reason stated above. It is of very good flavour and keeps well. Should your correspondent feel disposed to forward his address to me, on receipt of it I shall be happy to forward him a few sets.—*THOMAS LOCKIE, Culham, Oxford.*

COTTAGE GARDENERS' DICTIONARY (H. H.).—That published by H. G. Bohn is the same as that published previously by Kent & Co. You are quite wrong in thinking the writer your name not "practical," for he is a head gardener at a good establishment. The others you mention still write for us though, for private reasons, they assume fictitious names; and many able men besides, whose names have never appeared, aid us by their contributions and in answering questions.

BOUGAINVILLEA, &c. (K. S.).—Bougainvillea speciosa is identical with B. spectabilis, a native of Peru and other parts of South America. Lomaria gibba is a very handsome greenhouse Fern from New Caledonia, with stout, erect, arborescent caudex, and plummy light green fronds, 2 feet long, divided into linear, acute, undulated segments, which are gibbously decurrent at the base; the fertile fronds with linear segments.

BOOKS (H. R.).—There are two supplements to London's "Encyclopædia of Plants," the last was published in 1855. Messrs. Longman will tell you the price, and whether they can be supplied. There is no recent edition of either Paxton's "Botanical Dictionary" or of the "Cottage Gardeners' Dictionary."

MOVING THE DEAD FRONDS OF HARDY FERNS (A Subscriber).—The decayed fronds are better not removed in winter, for they act to the crowns as a protection from frost. Such protection from severe weather is antagonistic to the more delicate kinds; but for the common kinds it does not much matter whether the fronds are removed or not.

CONCRETE WALKS (A Constant Subscriber).—A layer of stones, brick-bats, shells, or clinkers, 6 inches deep, to form a dry bottom; a layer of chalk or lime, in the proportion of one to ten of the stones or other foundation, and well rolled and watered, to the thickness of 3 inches, with a rise of 2 inches in the centre; over this half an inch of gravel and lime, or fine chalk; water and roll well again; add one-eighth of an inch of the best coloured gravel, and again roll until quite solid. Have the walk 2 inches wider on each side than you desire, as this checks the turf and weeds from encroaching, and prevents the rain water getting to the foundation of the walk. We do not know what book you refer to.

TRANSPLANTING ROSES (Three-years' Subscriber).—You may remove Roses planted last November from now until the beginning of May. Take them up carefully and wrap the roots in damp moss or hay. Plant as soon after removal as practicable, watering well afterwards. If not removed before the shoots have made some growth, it would be well to wrap the stems and also the roots and heads in damp hay, not too much, but a little to keep them fresh. Water copiously after planting, daily or every other day at the roots, and syringe the heads night and morning, shading from bright sun for a few hours in the middle of the day until the plants become established. In this way you will be enabled to remove the Roses; but they will not do so well this summer as if they were not removed.

KEEPING VERBENAS THROUGH THE WINTER (Verbena).—The best way of keeping Verbenas over the winter is to insert the cuttings in pots or pans and not too close together, in the last week in August or the beginning of September, in order that they may be struck before dull damp weather sets in. Keep them in the same pots or pans over the winter, placing them on a shelf near the glass in a cool, dry, airy part of any structure from which frost is just excluded. To pot or prick them off in autumn is unnecessary, as it wastes room, and many are killed in consequence of the waterings necessary to keep them from flagging. We have them, fifty or more in 12-inch pans, any cutting in which will now furnish half a dozen cuttings, which we will put in soon in gentle heat to strike, for we find an early spring-struck cutting every way better than one inserted in autumn and potbound. In winter they should have no more water than is necessary to keep them alive. Verbenas and Lobelias are rather more tender than Calceolarias, the latter bearing more moisture than Verbenas. We think your want of success is due to keeping them too damp, both as regards the atmosphere and their roots, the transplanting into boxes contributing to the evil as much as anything. We have the same ideas as yourself respecting the preservation of Verbenas in a cold frame during winter, much in the same manner as Calceolarias, but damp is their greatest enemy, and how to get rid of this in a cold frame is a question difficult to answer, especially when they are shut up (as our Calceolarias have been for the last three weeks), without once removing the covering.

TRIMMING HOLLY HEDGE—SEEDS OF SALVIA MEMOROSA AND MELILOTUS LUCICANTHA (A. S. A.).—The most suitable time to cut back a Holly hedge is from the 1st to the 29th of May, and the very best time is just before the new growths are made. The shoots come as freely from the old as from the young wood, and an old thin tree will become very ornamental by cutting it well back. We have perfect cones of several of the variegated kinds that but a short time ago were not fit to be seen, but with cutting well in they are after a year's growth perfect pictures. Any one having an old thin hedge, or a spare ugly tree, will do well to cut it to the desired shape during May, and by the autumn of the same year they will find it transformed into an ornamental object. We do not know where Salvia nemorosa is to be obtained. It is a most ornamental herbaceous plant, and forms a lovely bed of pale purple, its innumerable blossoms being borne in the greatest profusion from May to the end of September, and its silvery foliage being as bright as many ribbon plants. It is remarkable that, being of such value for decorative purposes, it should not find its way into our lists of herbaceous plants. Seeds of Melilotus leucantha can be obtained from Messrs. Sutton of Reading, and doubtless many other seedsmen. Of all the plants in a garden there is none which the bees visit more than Salvia nemorosa.

PRUNING CLIMBING ROSES—SOIL FOR ROSES (C. Bond).—In pruning the majority of climbing Roses the aim should be to thin-out the old shoots, and lay in the previous year's well-ripened wood, leaving the shoots at some length; for if cut close they will only make wood instead of flowering. Instead of pruning them to so many eyes, as in the case of standard Roses, merely thin-out the old wood, and take off a few inches of their points. All overlight wood and the shoots that tend to cause irregularity should be cut clean out; but the less a climbing Rose is pruned the more abundant will be the bloom. Roses for early blooming should be pruned in February. The old saying, that a Rose will grow well wherever a Cabbage does is to a certain extent correct, for they both flourish in a rich soil. They like a deep, rich, and rather strong loam, but if you manure your soil liberally with half-rotten cowdung, or other not very stimulating manure, Roses do very fairly on gravelly soils, having the plants on their own roots, or on the Manetti stock budded low. On light gravelly soils the plants on the Dog Rose are shortlived, and never vigorous. All Roses should be planted on ground well manured, and be kept mulched with short manure.

SAPOONARIAS—NEMESIA COMPACTA (An Amateur).—The Saponaria calabrica alba, in our opinion, is not equal to the pink calabries; the white is dingy, in-tend of clear. In-tend of making alternate little beds or rings of the two saponarias, we would advise alternating the pink Saponaria with Nemophila insignis, the white and blue of which would contrast well with the pink. The Nemesia compacta is a pretty little thing, with various colours. It should be raised in a little heat, and planted out about the end of May. They are mostly low-growing, a few inches in height. Alba has white flowers, insignis blue, and La Superbe rose; and compacta has often all these colours.

RENEWING VINE-BORDER—VINES IN POTS (An Amateur).—You seem to have done quite right with your Vines. It strikes us the roots had become too dry, which might be a cause of the Grapes shanking. This would also induce the roots to run down among the drainage in search of moisture. Be this as it may, you have done quite right. Protect your border from this frost. The easiest plan for fruiting your Vines in pots would be to set them in your viney, top-dress the pots with rich manure, as old cowdung, and let them break gradually. If you wish to force them, they will be much benefited by plunging the pots in a mild bottom heat, beginning at 55°, and gradually increasing the temperature in five or six weeks to 60°. Begin with top heat at 45°, gradually increasing it to 55° and 70°, with a rise of 10° from sunshine.

INK FOR ZINC LABELS (A Gardener).—Besides that to which you refer we have been told that the following is very superior. We have never tried it, and shall be obliged by any one who has used it informing us if it is a good and permanent ink for such labels. Two drachms nitric acid, half an ounce sulphate of copper, half a pint of water, mix; brighten the zinc with fine sand paper, and write with a clean quill pen.

EUPHARIS AMAZONICA CULTURE (Fairfield).—The *Eupharis amazonica*—the *E. grandiflora* of botanists—is a thick-leaved, evergreen, bulbous Amaryllid from Granada, which will stand, like many other Amaryllids, rather rough treatment, provided it has an extra start in growth, in a somewhat high temperature, in the spring. A common stove would then suit, if the temperature were not too high; and if a little bottom heat can be given at that time all the better. Thus, say from the middle of March to the middle of June, a bottom heat of from 75° to 80°, and a top heat in the house of from 65° to 70°. About the middle of June raise the pot out of the bed by degrees. In a few days remove the plant to a colder and more airy part of the stove, and then, in a few days, remove it to a greenhouse, where it will have all the sun heat possible, and water required, until September. Then diminish water, to hasten the hardening process, and, by the end of the month, remove again to a cool stove, where the temperature would range from 50° to 55°; and, of course, during the winter, at that temperature, little water would be required, but enough to keep the plant healthy and green. As soon as you think proper to excite the plant, give it, as above stated, a higher temperature, and a moist sweet bottom heat, though it will do without it. Fibry loam and a little peat will suit it, and manure water, or rich top-dressing, may be used when making fresh growth.

ARRANGEMENT OF FLOWERS (Amateur).—We think your proposed arrangement will look very nice—that is, *Perilla*, *Christine Geranium*, *Aurea floribunda Calceolaria*, and *Verbena venosa* or *Lobelia speciosa*; but you will have to peg the *Verbena* to keep it low enough. As to the ideas of mixing, and to *Punch Geranium* being preferable to *Perilla*, we agree with you. The following would make a beautiful border:—*Punch* for background, or two plants of *Punch* and one of white *Feverfew*; second row, *Christine* and *Verbena venosa*, mixed—the *Verbena* the same height as the *Geranium*; third row, *Calceolaria*; edging, *Lobelia speciosa*. Sow the *Verbena* now in a nice hotbed, prick off and pot as soon as you can handle it, and it will be quite high enough for the *Geranium*.

FLOWER-GARDEN PLAN (Yorkshire Amateur).—Unless on the principle that flowers will always look well, and that you have so planted as to make each bed distinct, no plan could be uglier than that which you have adopted. Each of these pieces of lawn, even as now serpentine, with the walk through them, would make a nice group of beds, regularly balanced, and with lawn between them, so that you could balance and contrast your colours. In previous volumes, and in the "Flower Garden Manual," you will see plans which you might easily modify to suit your place. We cannot undertake to do this, or we would never know where to stop. For instance, the middle part of plan 6, with a little modification, would just suit your largest piece of ground, giving you seven clumps; and so would a modification of plan 4. If you do nothing of the kind this season, then, certainly, we prefer the one circle in the middle to these unmeaning scattered clumps. We would even prefer a large oval to the circle, as more in unison with the shape of the ground; and then you might plant it in bands, or make a figure by the planting, in Mr. Robson's style. We do not think you want teaching as to combining or contrasting the colours. If you form a group, which we would advise, we will give you one rule, and then you cannot go far wrong: The group should be so complete in itself that one figure or clump cannot be changed without destroying the balance of the whole. In your lower beds not one has the least connection with another.

NAMES OF PLANTS.—(W. L.).—*Erica vagans*, (*Spring Croft*).—*Magnolia foresta*, (*A. W. C.*).—*Garrya elliptica*, a hardy shrub from Northern California. (*G. H.*).—2, *Cytisus canariensis*; 3, *C. rhodophens*; 4, *Acacia armata*; 6, *Pultenaea stricta*; 7, *Fabiana imbricata*; 11, *Cyclamen persicum*. The rest cannot be named correctly without their flowers. (*J. W.*).—*Leucopogon australis*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE WILTSHIRE RECTOR.

GOOD "WILTSHIRE RECTOR," a kindly soul, living well and cheerfully among his children and his pets, and his pursuits! A little time ago, I breakfasted with him (in imagination), and I pictured him to myself seated at a cheerful table, with "wife and bairns," revelling in the luxury of new-laid eggs, and "the Journal," sitting among his boys, as Longfellow says, and finding lessons in eggs and all things. I know some oldish boys who profit by his teaching and look for it. Well, he went to see "Y. B. A. Z.," and before he went he asked himself what he was like. I, endeavouring to look like Lord Burleigh, and profoundly shaking my head, ask myself, What is "WILTSHIRE RECTOR" like? "The Journal" is well known among my circle, and I ask one of my family if he has ever imagined what the "W. R." is like? He says he met a man in the Strand exactly like him, but as he has never seen him, and cannot describe him, it does not help me at all.

I am led to this, because I said the other day to a clerical gentleman I met, "I often read your contributions to THE JOURNAL OF HORTICULTURE." "Mine!" said the good friend, "I never wrote a line for it in my life." I had long made up my mind, that I recognised his style throughout; had I seen the manuscript, I should have traced the dottings of

the i's, and the crossing of the t's. Besides, at certain passages I could imagine the writer's countenance, I had done so for months, and then to be told he was not the man, it was too bad.

Then, who is he, and what is he like? It tormented me. As the snow was falling fast, and I could not get out, I leaned back in my chair to see if a waking dream could not give me an idea. I am not sure I did not lose a few minutes, but I gained the following portraiture:—Rather tall than short; high broad forehead; hair scantier in front than behind; grey eye, full of fun; and a face beaming with kindness and intelligence. Rather more like the sleek Cassius than the lean Brutus. He must wear a wide-awake about the yard, farm, and poultry-houses.

I endorse all he says about breeds, and admire them all in their places. I admire the Malays as fancy birds, and on the table, but they would never be popular in a market, and they are not profitable. It must be in that sense Mr. Bailly means they gave way to the spirit of utility. For years they were almost the only producers of cream-coloured eggs, and they were highly thought of; but now we have so many breeds that do the same, they are not so much sought after. The long, hard leg and thigh of this breed, and the comparatively small breast are not attractive in a market. They look more muscular than succulent, but eaten very young they are remarkably good-flavoured, more so than many Pheasants.

I believe all breeds to be popular must be remunerative; they must pay either in eggs or for the table, and to take a high standing they must do both. Polands are beautiful. They are good layers; but they are delicate chickens, and not table fowls. I believe next to the Dorking, the Brahma is the best in all senses. I will leave it for others to fight their battles as to purity, colour, or race. I speak well of the bridge that carries me over. They have supplied me with eggs all through the winter, and they and their chickens have defied frost and snow.—B.

POULTRY CLUB.

HAVING seen in your Number for February 7th a letter from "A TIMID EXHIBITOR," I observe he infers Mr. Douglas to be a dealer in poultry because he has sold £300-worth to one person, thereby imputing to the Poultry Club a breach of one of its leading principles. All I have to say is, that if he will take the trouble to make a list of our leading exhibitors, amongst whom I would call his attention to Lady Holmesdale, Mrs. Fergusson Blair, Lord Binning, Sir St. George Gore, Captain Hornby, Captain Heaton, Mr. C. Felton, &c., whose great successes in breeding and exhibiting have caused their surplus stock to be closely looked after; if he can term these parties dealers in poultry (a fact I have still to learn), I will grant he has something to write about. As to the Judges appointed by the Poultry Club, to which he imputes such unworthy motives, their motto might very properly be "an open field and no favouritism." As he shelters himself under a *nom de plume*, I think his letter requires no more comment from—K. W. BOYLE, Rosemount, Dundrum.

POULTRY-KEEPING FROM A COMMERCIAL POINT OF VIEW.

MR. GEYELIN's article in your Journal of the 7th is calculated to seriously mislead any person who accepts the figures contained therein as facts.

With your permission I will point out a few items that I believe to be wrong.

First, Mr. G. gives an estimate of the revenue and expenses of one chicken six months old, as follows:—

REVENUE.		s. d.	EXPENSES.		s. d.
Selling price	.....	2 6	Interest, rent, fuel, &c.	.....	0 3
Feathers	.....	0 1	Cost of chickens when	.....	0 2
Manure	.....	0 3	hatched	.....	0 2
			Food	.....	0 9
			Labour	.....	0 2
			Profit	.....	1 6
		2 10			2 10

Now, a chicken cannot be fed six months for 9d.; it should be 1s. 6d., which would reduce the profit to 9d.

Second, the estimate for one breeding hen shows 150 eggs at 10s. and 24 chickens at 3d., but if the eggs are all sold none can be hatched; the same occurs in the estimate for one laying hen.

Third, the amount credited for manure is considerably too much, as at least two-thirds of the manure produced is lost.

Fourth, Mr. G. takes credit for 90,000 eggs produced in the winter and selling at 15s. per 100 (See page 16.), forgetting that he has previously taken credit for the sale of the same eggs at 10s. The amount to be credited is simply the difference between 10s. and 15s.

I do not think that £500 per annum could be calculated upon as the extra price for choice birds.

The subjoined statement will be found much nearer the fact than that of Mr. G.:-

REVENUE.		EXPENSES.	
50,000 chickens at 2s. 6d.	£6,250	50,000 chickens, interest, fuel, rent, &c., at 3d.	£625
Feathers at 1d. each	208	Cost, when hatched, at 2d.	416
Manure at 1d.	208	Food at 1s. 6d. each	3,750
2,000 laying hens at 180 eggs per annum, at 10s. per 100	1,800	Labour at 2d.	416
Manure at 6d.	50	2,000 laying hens, interest, rent, &c., at 1s. 6d.	180
1,000 breeding hens at 150 eggs per annum = 150,000		Food at 1s. 6d. each	450
Deduct eggs reserved for hatching	60,000	Labour at 1s.	100
		1,000 breeding hens, interest, rent, &c., at 3s. 6d.	175
		Food at 1s. 6d.	225
Manure at 6d.	450	Labour at 2s.	100
Extra profits on eggs during winter	235	Commission on sales—10 per cent.	956
Extra price for choice birds	500	Carriage, packing, &c.	200
			£7,583
		Profit	2,153
			£9,716
	£9,716		£9,716

I allow 60,000 eggs to produce 50,000 chickens. I presume any one would be well satisfied to raise ten chickens out of twelve eggs, which is the same proportion.

Mr. G. charges 3s. 6d. for each breeding hen for interest, rent, fuel, and sundries, but charges only 1s. 6d. for the laying hens for the same purposes.

I think it is a question open to serious doubt whether 50,000 chickens could be sold at 2s. 6d. each.

I have not the pleasure of knowing Mr. Geyelin, but I beg to assure him that I do not dispute his figures simply for the sake of disputing; but I feel that were such a statement allowed to go uncontradicted some might take it as a basis for their own calculations, and then nothing but woeful disappointment would await them.—C. S. J.

CRYSTAL PALACE BRITISH AND FOREIGN BIRD SHOW.

THERE is, in our opinion, no item in the Crystal Palace Company's winter programme possessing more attraction, and of greater interest, than the annual Show of British and Foreign Birds.

The one upon which we have now the pleasure of commenting commenced on the 18th inst. It is a splendid exhibition of small birds; and, although we have extolled the merits of previous collections, yet we have no hesitation in saying that the present one excels all others in the number and the splendid condition and quality of the birds; and we regret that the weather was so unfavourable as to prevent a larger number of visitors from attending so fine a show. We are glad to find that the Company have been discreet enough to change the day of opening again to Saturday, as it must be more profitable alike to the Company and to the exhibitors. Our notice was specially attracted by the beautiful condition and magnificent plumage of the specimens in general. The entry for varieties contained some very interesting examples of the freaks of nature in the way of perfect albinos, consisting of a Thrush, a Linnet, a Jackdaw, and a Blackbird, of which, perhaps, some uninitiated individuals will be incredulous; but there are the stubborn facts, which cannot be denied.

We observed some very fine representatives of the Blackbird, Bullfinch, and Goldfinch, and also some exquisite specimens of the King Parrot. Cockatoos, Grey Parrots, and Australian Parakeets were also objects of great attention.

With reference to the Canaries, although we cannot say that the Belgian class was so fine as last year, yet the London Fancy, and the Norwich and Jonques, as well as the Lizards, made up for the deficiency.

The Goldfinch and Linnet Mules, especially the Linnet, were very fine.

There were two entries of Pheasants, and we should like to see the numbers in future increase.

The classification of the birds, and the various arrangements in connection with the Show, were admirably carried out, and too much praise cannot be bestowed upon the parties who were responsible. The Judge must have had the same, and even greater, difficulty as at the Show last year, in awarding a prize to a class in which all specimens were so equal in merit: and it is only one who has a thorough knowledge of ornithology that could discover any difference between one bird and another.

MALAYS ON THE TABLE.

PERHAPS you will allow your "Persian correspondent" to add a line to "WILTSHIRE RECTOR's" kindly story of his visit to me, and this in simple justice to the Malay. It so happens that the bird in question, which appeared on my table, was not the bird we had eaten three weeks before. In fact, it was like the Irishman's pig, which, when killed, he declared to a friend, "did not weigh as much as he expected, and he never thought it would." Well, it was the same with this identical bird, it did not look as well as I intended, and I never thought it would. I was afraid of it, and I confess that I was somewhat crest-fallen, when, removing the cover, I found the breast as our genial "WILTSHIRE RECTOR" described, "sharp and thin." In justice to the Malay, I do not believe this is generally the case; long-legged as they certainly are (a friend of mine says he should be afraid of their looking in at his bedroom window), yet it is wonderful how a bird, which when hanging by his legs on a nail, has these on the nail "here," and his head "yonder"—I say it is a mystery how his very long continuations can be packed and trussed up to make a seemly bird on the table, but it does, and I can only hope I may yet have the great pleasure of convincing "WILTSHIRE RECTOR" on this point, as much as I have converted him as to their living good looks.

I do not wish to report him to his Bishop, but I must say that I thought we both of us worshipped the sun, or at any rate, we greatly admired him. The visit was in very wet weather; but lo and behold the sun shone brightly all that day, and Englishman-like, we continually commented on his appearance and beauty, &c. That night, if I mistake not, it rained furiously. Well, I must say I am "Persian" enough to have some veneration for that great luminary, especially when he shines on so pleasant a meeting as ours was. I will only add, many thanks to "our Journal" for being the means of introducing me to one who is a kindly genial lover of nature and her varied charms, and who is so warm-hearted and friendly to boot.—Y. B. A. Z.

HOME SUPPLY OF EGGS AND POULTRY.

Is there any valid reason why England should not supply her own wants in the shape of eggs, poultry, and rabbits? I dare say the money we pay foreign countries for these necessities, does not fall far, if at all, short of £500,000 annually. Can they not be produced as cheaply, abundantly, and profitably at home, as in France and Belgium? Is it not time that some efforts should be made to solve this problem? I am aware much has been done for the last few years to improve the breeds of our poultry, but I have never heard of the production of eggs and poultry having been attempted in a large way, as a matter of trade or business, though I have often been told that to make this stock pay they should be kept in such numbers as to employ the whole time and attention of working people. M. de Lavegne estimated the value of poultry in France at £8,000,000, while that in England was no more than £800,000.

As a national branch of rural economy, we know nothing in England of the breeding and management of poultry.

hence practical men never think of embarking in a pursuit which is found so profitable in other countries.

We sadly want sound, reliable, practical information on this subject, and if through your columns some of your correspondents will endeavour to ventilate this question, much public good may be the result.

If one acre of average land were cropped with the grain, pulse, and roots most suitable for feeding poultry, how many head should it maintain for one year? Again: What might be a fair moderate profit to expect per thousand in keeping poultry thus on a large scale, assuming suitable houses, warmth, care, and ventilation for such stock?

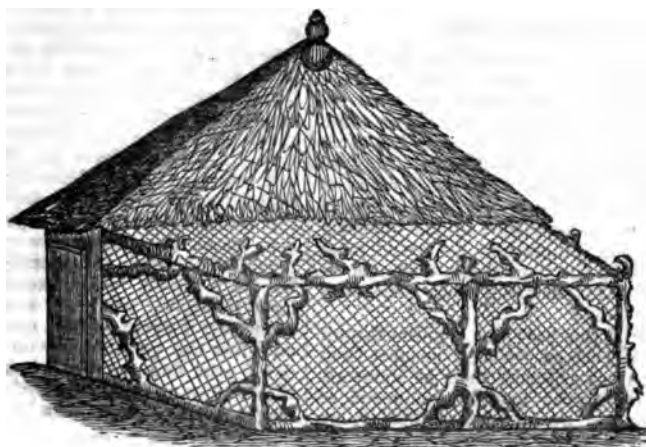
I have heard and read much on the subject of artificial incubation, and I knew a lady who produced all her own poultry by a most ingenious incubator of her own invention, but I never could ascertain how far the system could be

relied on in a commercial point of view, which is the practical test of its merit. If, undoubtedly a success, then I can see no limits to the profitable production of poultry in England. Turkeys and Geese of the largest breeds are now worth very nearly as much as a fat sheep of the smallest breeds, and it is passing strange that you must give 2d. for a "new-laid egg," when you may buy a quarter of wheat for 32s. High authorities tell us it does not pay to feed oxen, and farmers now say they are selling grain at prices for which it can hardly be grown, so I am induced to ask if the experiment of a regular and well-managed poultry farm would be likely to succeed? for if so I should be very well inclined to try if England cannot produce eggs and fowls as cheaply as France; and, further, if the air of our own happy land is not fully as congenial as that of Belgium to an—OSTEND RABBIT.

ORNAMENTAL HEN-COOP.

PERHAPS "F. P.'s" desire for an ornamental hen-coop may be found difficult to satisfy in the old stereotyped form, so I send you a drawing of a pheasantry we had many years ago at Stanton Lacey, near Ludlow. I have often thought that a dwarf portable construction after that pattern might advantageously be made to supersede the old style of coop. The thatch of the above pheasantry was of heather; but in its absence reeds or straw could be substituted, and the roof, in the case of the coop, could be made moveable, and fastened by iron hooks and eyes. From being square at the base, it would prevent the sun's striking the pen with too much force at mid-day, and would also render the coop warmer at night.

For combining neatness with the safe housing and protecting both pheasants and chickens in their young and tender state, when I sent you some papers on rearing the above, you illustrated at page 134, Vol. VIII., May, 1852, a description of coop which we have always made use of for the



Length, 29 feet; height, 6 feet; width, 12 feet, including the back building.

purpose; and when neatly made, and painted a lively green colour, I incline to think it would not be thought otherwise than ornamental even in the kept grounds. I always thought them ornamental rather than otherwise on the

lawn, backed by ever-green shrubs, &c. The late Earl of Craven was wont to have a number of them on the lawn at Hampstead Lodge, occupied by Bantams with broods of Pheasants and Partridges. A dry lawn or grass plot is the proper place on which to set the coop, even when occupied with chickens. The net protection, figured with the coop, serves admirably for the young chickens to feed under, as well as to shield them from birds of prey and other disagreeables during the day. The front sliding board acts as a preventive against rats and other prowling vermin

during the night. It should be withdrawn in the morning, by sunrise, and the coop shifted to a fresh position.—UPWARDS AND ONWARDS.

SOMETHING ABOUT GOLDEN HAMBURGHS.

As the shows are nearly over this season, I think one may say something with respect to judgments given. First, I will take Leeds. I cannot think that any good judge of the Hamburgs would have placed the prizes for Golden-pencilled where they were placed had there been a good light. It must be remembered that no class of fowls require the same amount of good light as the Hamburgs; because (after pure white ear-lobes, and fine straight combs set firmly on their heads) they are strictly a bird of feather. I know one man who sent two pens of Golden-pencilled Hamburgs, one a very good pen indeed, the other worth nothing except for the table; the bad pen was awarded a third prize and the good one was unnoticed; and other mistakes occurred in the same class, that never could have been made with good light and good judges. I am satisfied, if the judges had sought to favour the aforesaid exhibitor, that they could have done so by giving the prize to his good pen; and judges must know, that there is no class of men who know really good specimens so well as they who have striven ever since the show began with a constant aim to perfection.

By-the-by, this brings me to the Poultry Club. There is one question I should like to ask the members: How will they make congenial the dark gold ground with the light gold ground in both Pencilled and Spangled Hamburgs? I have seen good specimens in both light and dark ground. I like the dark ground much better in both classes, and yet I have seen men who said they preferred the light ground because it showed the black much better.—AN OLD HAMBURGH BREEDER.

PRICE OF NEW-LAID EGGS.

WHEN in reply to your correspondent, "C. S. J.," I stated that the price of eggs, like that of everything else, must necessarily be regulated by the demand and locality, I considered the subject at an end. Not so, however, with "C. S. J.," who evidently is anxious to be introduced to a salesman, who will purchase eggs not from a poultry-breeder, nor even from a person who buys them of farmers, but from one who buys the eggs third hand as fresh laid. In your No. 199, endorsed by your editorial remarks, "C. S. J."

says he buys from a man new-laid eggs at 8s. per 100, and, of course, the man must get a good profit, as he buys them of farmer's wives. In your No. 202, "C. S. J.," says again, that he is in a position to supply a few hundred new-laid eggs weekly (very likely), and that since my reply he has been in London, and could obtain no higher offer than 5s. per 100 for fresh-laid eggs.

Now, how does "C. S. J." know that such eggs are new laid when he buys them second-hand? And how could a respectable London salesman assure his customers that the eggs from "C. S. J." are really new laid?

London tradesmen are too wide-awake to give the price of new-laid eggs for such as do not come direct from a well-known and respectable breeder.

Any poultry-breeder consigning regularly to an honourable Leadenhall salesman will always obtain fair returns; or I can, if it were necessary, give my authority, that even in the height of summer new-laid eggs bring 8s. per 100 in Leadenhall Market.

No person is ignorant of the fact, that a manufacturer will command a far higher price for his goods in the regular course of trade, than a person can obtain for the same goods if he is not an accredited agent to the manufacturer, but simply buys bargains. On my part this subject is closed.—G. K. GYEELIN, C.E., London.

TURKEYS AT EXHIBITIONS.

We have observed your announcement of the Bath and West of England Poultry Show, in June next, and its schedule has been published, in which we notice a liberal increase of prizes in some of the classes—alas! not in ours. In this, as in too many instances, though we pay the same entrance fee, the poorest prizes are allotted to us. May we ask is this consistent with the complaint so often made of us, that we are "so hard to rear?" Or are we mistaken in our notion, that articles are more valued by the difficulty in procuring them? But the information we would most earnestly solicit in this: Have the Committee of the above-named Show made a further extension of their generosity in the increased size of our pens?

The undersigned writers of this have but a philanthropic motive in this inquiry, inasmuch as for their comfort their owner has determined upon not exposing them at Hereford, to the imprisonment their revered ancestors endured at Bristol. For ourselves, fond as we may be of display, we are not prepared to annihilate our beautiful fans in the niggardly space we are likely to meet with at Hereford. Though our career is still youthful, we have as yet held our laurels against every competitor, and may, therefore, justly subscribe ourselves—FIRST PRIZE TURKEYS.

YOUNG AND VIGOROUS QUEENS.

I HAVE much pleasure in acceding to the polite request of Mr. Edward Fairbrother at page 62.

The importance of having young and vigorous queens at the head of stocks can hardly fail to arrest the attention of even the comparative novice in bee-keeping, while the aparian of enlarged experience must have been struck at the great diversity that exists in the breeding powers of queens. The preservation of those singularly prolific mothers frequently met with should be the care of all; but to such as keep their bees on the depriving or non-swarming principle it is indeed "the great desideratum."

My attention was early attracted to this point, so early indeed as the very commencement of my aparian career. The first hive I could claim as my own exclusive property was a weighty prime swarm of that season with a queen, therefore one year old at least. Against the coming summer various were the domiciles prepared for all expected probable and improbable swarms. Anxious was the expectation and vigilant the watching; but no swarm emerged either that good season or in the two favourable ones that followed. I recollect my hopes were all along buoyed up by the yearly-increasing number of drones, being then unsophisticated enough to look upon the unusual preponderance of the male element as an augury of ultimate great success, instead of an indication of the worn-out condition of my aged queen. The season the drones exceeded all bounds; and my

patience being thoroughly exhausted, I fumigated the hive (then very light), searched for till I found and examined the venerable monarch, and destroyed her, adding her fit remaining subjects to another colony.

This early impression was not easily effaced. Your ceticous neighbour *Punch* somewhere wittily remarks that "there are two things a young man rarely forgets—his first love and his first cigar;" and in like manner the young bee-keeper does not readily forget his first hive and the lessons it taught him. I ever afterwards kept a sharp look-out as to the age and breeding capability of every queen I possessed. My apiary being wrought first exclusively on the natural-swarming principle, I took care at the end of the season to preserve at the head of my stock-hives only such young queens as promised well, and subsequently, when the depriving system was combined with it, placed my picked queens at the head of the depriving hives. Latterly, since I have eschewed natural swarming altogether, I procure young and vigorous queens after this fashion: As the season draws to a close I make a tour of inspection through the cottagers' apiaries in the surrounding district. They as a rule invariably dispose of the prime swarms at the end of the season, as out of the they can generally realise most money, or, failing a purchaser, most run honey, consequently their queens are necessarily one year old. I generally purchase a few second or third hives whose population speak well for the fertility of their queens, or any prime swarms of whose success the cottager is not unnaturally proud, and such as I feel confident will irradiate the countenance of our blind parish honey-dealer when it comes within his grasp. The teeming population I then for a consideration bespeak, and send them from his ready brimstone match. On their being brought home I drive the stock whose queen I wish to dethrone into a hive of like dimensions, cage the queen, and feed liberally at dusk. I destroy the old queen, and place the box containing her subjects beneath their own hive into which the stranger bees and their queen have been previously settled, then gently draw the slides of the lower box; a few puffs tobacco smoke to both, and the morning light invariably reveals a most pacific union. In all my experience I never found a queen suffer by such a procedure, or, when the queens were on a par, and neither remove did I ever find the stock subsequently queenless. Would that I knew as almost infallible a mode of introducing queens singly.—A RENFREWSHIRE BEE-KEEPER.

OUR LETTER BOX.

MR. DOUGLAS.—Under the heading of "A TIMID EXHIBITOR." I think Mr. Douglas has forgotten himself when he says he has not dealt in poultry for two years. In my former letter I asked a very plain question; and again I ask another. Who claimed the first-prize pen of Game Bantams the show held at Belle Vue near Manchester last December, and sent the birds for a good profit at the same place? Why, Mr. Douglas, one of the judges who has not dealt in poultry for two years! and if I mistake not he had the boldness to claim them before the Show was opened. Facts speak for the selves; and again let me confess that I am a timid exhibitor, particularly so when I hear of a dealer thus acting being a judge of my produce again, though he has sold.—A TIMID EXHIBITOR.

HENS NOT LAYING (*Cochin-China*).—Eggs have been unusually scarce. If your hens are old that will be the reason. You can only expect what is laying from pullets. We have no doubt the severe weather has much to do with it. A change to warm days would make a great difference.

WASHING WHITE FOWLS (*Snowball*).—Wash the birds with soap and water. Use a sponge, and wipe the feathers straight down, as it is only the outside that is dirty. Put them in an open basket before the fire with some straw, and let them stay till dry. It is never safe to put other birds with Golden Pheasants, but if you do we advise the Bantams.

EGGS DESTROYED FOR A TIME.—CROOKED TAIL (*Subscriber*).—In 17 weather we should not think the eggs had suffered at all by being covered for four hours, but the temperature has been unfavourable for such an accident. You will easily ascertain by breaking one of the eggs whether they are spoiled, and it will be the safest plan. If you object to that you may watch the progress of hatching by holding the egg before a strong light. The twist of a cock's tail will probably descend to some of his progeny, but not to all. It is always bad policy to breed from such an one.

EXCESSIVE DEVELOPMENT OF SPANISH COCK'S FACE (*Country Poultry Fancier*).—We think you may trust to the bird for all you require. A more humane method is to fasten the eyelids up and down with strips of stre plaister. Even this causes the bird much misery.

LA FLÈCHE FOWL (*D. P. P.*).—The reference is to our own *Journal* (*Cochin*).—La Flèche fowls can be bought of Mr. Bally, 113, Mount Street. We published very full accounts of them and drawings two years ago. They are marvellous layers, and very good table fowls, but they do not sit.

A FALSE ALARM (*Jonas Jackson*).—We are happy to be able to relieve your fears by informing you that the bee which accompanied your letter was not a queen, but a worker whose abdomen is much distended, probably dysentery. Moreover, if your Ligurian stock be pure it could scarcely be proceeded from it, since it is certainly of the common black species.

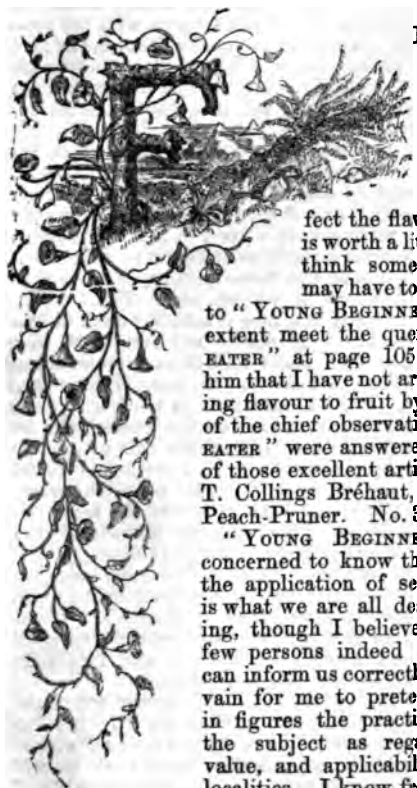
WEEKLY CALENDAR.

Day of Mnth	Day of Week.	FEB. 28—MARCH 6, 1865.	Average Temperature near London.			Rain in last 35 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
28	Tu	SHROVE TUESDAY.	49.2	33.4	41.3	14	49 af 6	36 af 5	46 7	39 9	3	12 44	59
1	W	ASH WEDNESDAY.	49.0	35.5	42.2	14	47 6	38 5	18 8	57 10	4	12 32	60
2	Th	Lungwort flowers.	49.8	32.2	41.0	15	45 6	40 5	53 8	morn.	5	12 20	61
3	F	Yew flowers.	49.7	31.2	40.0	11	43 6	42 5	33 9	11 0	6	12 7	62
4	S	Pilewort flowers.	48.9	31.7	40.3	10	41 6	43 5	20 10	17 1	7	11 54	63
5	SUN	1 SUNDAY IN LENT.	48.9	32.6	40.2	14	38 6	45 5	12 11	13 2	8	11 41	64
6	M	Shepherd's Purse flowers.	48.7	32.8	41.1	14	36 6	47 5	after.	13 3	9	11 26	65

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 48.6°, and its night temperature 32.8°. The greatest heat was 70° on the 4th, 1860; and the lowest cold, 15°, on the 4th, 1852. The greatest fall of rain was 0.84 inch.

HOUSE SEWAGE:

ITS EFFECTS AND MANAGEMENT.



FRUIT-EATER (may his crops always be bountiful and of first-rate flavour), says, "How this sewage watering should affect the flavour of the fruit is worth a little inquiry." I think some observations I may have to make in answer

to "YOUNG BEGINNER" may to some extent meet the queries of "FRUIT-EATER" at page 105; and I assure him that I have not arrived at imparting flavour to fruit by chance. Some of the chief observations of "FRUIT-EATER" were answered at once in one of those excellent articles by the Rev. T. Collings Bréhaut, "The Modern Peach-Pruner. No. 3."

"YOUNG BEGINNER" is "most concerned to know the truth" about the application of sewage, and that is what we are all desirous of knowing, though I believe there are very few persons indeed at present who can inform us correctly. It would be vain for me to pretend to work-out in figures the practical bearings of the subject as regards quantities, value, and applicability to different localities. I know from my own experience of house sewage that pro-

duction, as well as flavour, in fruits and vegetables, is greatly increased thereby, and that the time has now come when, the laws of chemistry being understood, those who think upon the subject will no longer from a sense of false delicacy remain averse to the application of house sewage to the land. How unreasonable is it for us to spend millions annually for guano whilst we poison our streams with excreta which would more than compensate for the loss of the guano. The latter is only fertilising according to the amount of ammoniacal salts which it may contain, and the very same salts largely abound, along with many other organic and inorganic substances, in sewage—such as are necessary for building up the structure of plants and fruits, particularly of the latter in their unripe state—viz., humus, potash, soda, phosphate of lime, carbonic acid, hydrogen, nitrogen, and oxygen. The latter exists not only in the atmosphere, but is always active in the soil when this, by good drainage and surface stirrings, is kept pervious and moist, promoting warmth and the decomposition of organic substances, and convert-

ing old into new compounds. By it the starch and gluten are converted into mucilage and sugar in the ripening of fruits; and the soil being porous and moist at that time in particular there will be more oxygen and warmth at the roots and more flavour in the fruit.

I discontinue the application of sewage at the latter period; for although the spongioses of the roots have the power to reject solutions which may not be wanted at the time either for growth or fruit-bearing, it would be unnecessarily taxing the rootlets to separate those solutions from the water which the plant does not want, and wasteful besides in the cultivator to give manure at a time when vegetation only required plain water. And here opens up a problem for those knights of the spade and the hoe who dung heavily, dig deeply, and take culinary crops from their fruit-borders, or who, with the common hoe (which along with the common rake I have many years laid aside; even the occupation of the spade is to a great extent gone since I have used "Parker's first-quality" five-tined steel forks), are so prone to mould and chop about the roots of Potatoes and other crops—all the deeper apparently because the roots happen to be there. "Various salts have been dissolved in the same solution, and plants with their roots uncut have been made to vegetate therein, and it was found that only some of the salts in different portions were absorbed; clearly establishing that plants possess discriminating powers—that they do not in an uncut state absorb solutions merely because they happen to be in the soil. And, on the contrary, careful researches have proved that when the roots were cut the plants absorbed all the solutions indiscriminately; and that when these plants were afterwards chemically examined, the salts so absorbed were found in them crude and unaltered." The above is an abbreviation of a paragraph which I read some years ago, and which struck me very forcibly at the time, and I have taken care since then never to crop my fruit-borders, or mutilate the roots of any growing fruit-bearing tree or plant if I could help it. When I find it necessary to operate in that way I do so when the plants or trees are at rest, on the approach of winter if possible. I should not expect to find such delicious flavour in the London, Catharina, and the little Ironmonger Gooseberries, or the British Queen Strawberry, Marie Louise and other Pears, and Cox's Orange Pippin Apple, as we are accustomed to, were I to apply manure in any shape, and mutilate their roots when their fruit was ripening or even forming.

I will relate a case in point. Returning from some city business last December, I called in at Fleet Street to pay my respects to "our Editors," and they informed me that they had just been tasting some samples of Pears I had sent, requesting their opinion of them as to flavour. They said, there was no mistake about the flavour of mine; but that those grown only a few yards off in a neighbour's garden "tasted as if they had been watered with sewage!" It was just the contrary. Mine had been watered with sewage, without the surface roots having been disturbed in the least; the trees were growing in a five-foot border

and trained against an Oxfordshire stone wall. Those of my neighbour have a good brick wall, and a capital border three times the width of ours. A large amount of stable-dung is put on it, and it is deeply dug and heavily cropped with vegetables all the year round, and what unutilised roots remain are, of course, growing or rotting in the subsoil: crude salts must be chiefly the result; so the fruit "tasted as if watered with sewage." It opens up a wide field for thought and observation, however.

I felt proud, too, to find some of my productions so well spoken of at head-quarters, and if I were to write what I have since heard of the remainder I might, perhaps, be thought conceited: so to proceed. "YOUNG BEGINNER" says that his sewage consists of all the slops of the house, rain water being otherwise disposed of. Are we, then, to consider that this sewage is compounded with the water from a well? Silica, lime, magnesia, and alumina are denominated pure earths, and plants cannot grow in them when watered with chemically pure water, and when the water is drawn from a spring it is generally comparatively pure. But when the pure earths, mentioned above, either united or singly, are watered with rain water, vegetation will then be supported by the ammonia which the rain water contains; and that is a chief reason why the latter is so much to be preferred to that from a spring. However, ammoniacal manure in plenty would be mixed up in the purest water in the state of sewage. I merely mention the circumstance in passing as showing a distinction between pure and rain water, because the sewage that I use is mixed up exclusively with the latter, and should this not be so in the case of "YOUNG BEGINNER" it is a point of difference, and so far the sewage is of less value for plant life. He next says, as "points of difference," that "his ground is newly broken up, and the subsoil a nearly-pure sand;" but he does not say of what nature the surface is. At any rate it is not sand, and the subsoil being so, it is one of the best for the surface soil to rest on, as it will naturally secure a good drainage. Again, as the soil is "newly broken" up, I conclude it to have been turf, which is also fortunate, as it is full of the decaying roots of the grass and other organic substances, which, with the assistance of sewage in a light soil, will insure production. I empty my tanks regularly as they become filled throughout the year, and during the winter months I apply their contents to the Broccoli tribe and to evergreen shrubs, because their roots at that time are comparatively active to receive the benefit; but the plan actually adopted by "YOUNG BEGINNER" is "to throw the contents of the tank on land intended for spring cropping," which, I beg to inform him, is by no means "equivalent to wasting" it. Stagnant water on an undrained soil will dissolve the richest soluble portions, and thus surcharged every flush of land water would carry them off. Not so, however, the well-drained ground, for it will like a filter take from the sewage water all that is suitable for the growth of plants, and till such time as the plants are there to partake of it the soil will hold this fast. Of that practice and science have left no doubt. Some of the richest water meadows in this country are formed on subsoils of broken flints, gravel, and sand.

It is difficult to state how "much land can be manured by 8000 or 10,000 gallons," about 40 tons of sewage. In the first place it would depend upon the nature of the land. Sandy or gravelly soils however bountifully watered would cry out for "more!" We are informed through the press, that the quantities of sewage given per acre every year in different localities has varied from 8000 tons down to 225 tons; and the worth of the sewage per head is very variously calculated at from £1 8s. down to 3s. 2½d. per annum. We want proper chemical analyses to decide the value of the sewage of different towns. As more reliable data, we read that at Croydon by the use of sewage the increase of the value of land per acre ranges from £5 to £15; and at Mansfield, land worth formerly only 3s. per acre, now lets for £12. At Edinburgh, the sewage has been carried over some meadows for more than sixty years; and some portions of those meadows, formerly barren sea-land, have become valuable property, and crops are now sold from off them annually realising from £20 to £38 per acre. These "improved and twenty-five acres and those degraded

to the sewage escaping from half the modern Athens, about 80,000 people!

The extract quoted by "YOUNG BEGINNER" I can vouch for. According to my own practice and observation, no limit can be imposed on the words, "any time before;" and that sewage can be most profitably applied to grass, the Earl of Essex gives evidence as follows:—"During the winter, from October to January, or longer, I apply it to meadows for hay, two dressings per acre, with about 50,000 gallons—i. e., 255 tons. I have done this now two winters, and the increase of hay, both in quantity and quality is most extraordinary." An analysis by Mr. Way has also revealed to us, "That grasses irrigated with sewage contain 100 per cent. more meat-making matter than grasses not irrigated." Again: the Earl of Essex writes:—"In 1857, I had nearly seven acres of Wurtzel almost entirely taken by the fly, and during intensely hot and dry weather I transplanted five acres with the assistance of sewage, and, although a transplanted crop, it was the largest I ever had, over 45 tons per acre." Mr. G. Shepherd, C.E., writes—"I have myself made experiments on Turnip seed with town sewage, with the most satisfactory results. As soon as the seed was sown, the land was irrigated with sewage, the seed immediately germinated into strong, healthy plants, and were out of danger from the Turnip fly before the seed not irrigated made its appearance above ground."

I could quote many more passages to the same effect, but I will now return to my humble garden at Woodstock, which "FRUIT-WATER" rightly conjectures to be in "the upper valley of the Thames," the soil here being a sound gravelly loam, 2½ feet deep, resting upon a clay. I find 300 gallons of sewage to the 46 square yards is sufficient to saturate it completely; and this operation twice performed is equal to 60,000 gallons, or 310 tons 12 cwt. per acre. But I do not understand, when I stated this, how it should "seem to lead to discouraging results?" If others are better off than myself I do not see why those fortuitous circumstances should discourage me. I hold fast to what I have and make the best of it. If I had six times as much sewage as this household affords I could use it on the garden, and let the holdings be large or small, I prophesy this will be the feeling of most people in a few years. I have only sufficient sewage in the summer to give to the most important crops, and then only at the times when they are the most immediately benefited by it. Like "YOUNG BEGINNER," the want of more may create in me "unwelcome feelings," but let us persevere and wait on Providence. Perhaps some day a sewage company, limited, will convey their mains, with branch pipes leading from them, near our dwellings? Town sewage although more largely diluted with water, is enriched by animals and from many other sources, and I consider the quality would be equal to the best of mine.

The question, "How to dispose of the winter accumulation?" being answered, I would still advise "YOUNG BEGINNER," if he has some years' certainty and feels an interest in his place of residence, to make the extra tank to hold 3000 gallons, for if it were only to store that quantity of rain water to provide against drought at the time his fruit was ripening, it would prove a good investment. The method of procedure stated for a sandy subsoil would be necessary, and it would take all the money. I do not find it cost more than half that, proportionately, to make a tank here, for the subsoil being a retentive clay the outside lining with puddling can be dispensed with. We have also plenty of stone, which when bedded in good lime mortar, pointed when meant for sewage, and lined, for holding water, with a mixture of Portland cement and fine-sifted gravel, we find to answer. Our water-tank last formed, is excavated below the clay a foot deep into the rock, and if it had been made deeper, under these circumstances, I should have considered puddling necessary facing the rock, on account of the fissures in it. As it was, I caused the bottom to be well rammed-in with 6 inches deep of rather dry clay in small portions by degrees, and with not too large a rammer (even for outside puddling dryish clay well rammed would be preferable to wet puddle, as the latter is apt to crack afterwards), finishing it off slightly concave, and on it was spread a layer of mortar, and on that were laid bricks on bed well set in cement. The mason was new to the work, and mixed the cement with too coarsely sifted sand, and the consequence

was some slight cracks and a leakage. I had the cement, in stripes about 1½ inch broad, chipped clean away from the stonework where the cracks showed, and the places filled-in again with a finer material formed of two parts cement and one of finely-sifted gravel; then a thick paint made of cement and water only was worked over the whole interior with a half-worn-out whitewash brush, and the tank now holds water perfectly. Our scullery tank is much smaller than the others which catch the principal sewage. When all danger from hard frosts is over, a Warner's three-legged pump with india-rubber hose, is placed near it for the season (all our tanks are fitted with a wooden trap-door, sufficiently large to allow a man to enter and clean the sediment out from the bottom), in order to pump the contents into the sewage-waggon, to be afterwards drawn and emptied into the large tank, and thus to add to the sewage in the latter the oily and fatty matter of dish-washings, which the potash and soda soon render soluble in the water.

Now, in regard to a question of "FRUIT-EATER," he inquires, "How may sewage be best applied so as to avoid the loss of temperature consequent on all surface irrigation?" I answer our family washing takes place once a-month, and the soap-suds are saved in a tub. As soon as the washing is over, or, if that time is not suitable, on any other day that will do, I cause the suds to be heated in the copper. I engage my man for what I call a "long day" on those occasions, and in the evening we set-to in earnest. Into one-third of a waggon of the boiling suds two-thirds of a waggon of sewage is pumped, which reduces the temperature of the mixture to about 90°. That is the way and the heat at which I usually apply it to the roots of fruit trees and vegetables. For orchard-house trees and flowers in pots, I bring the temperature up to 70°, by either mixing hot water with the sewage, or some of itself heated in a pan which I keep for the purpose.

When I perceive indications of red spider or mildew on the wall fruit trees, Roses, &c., I raise the temperature to 130°, by adding boiling soap-suds, and syringe the leaves of the trees forcibly both on their under and upper sides, to the utter destruction of the insects or mildew. They cannot exist in the overpowering ammoniacal liquid. My man as he draws the waggon for my convenience in syringing out of it, although he is by no means over-sensitive as to smell, often amuses me by the contortions of his prominent nasal feature on these particular occasions. The packing of the syringe requires to be renewed after being thrice subjected to heat, and a few drops of sweet oil applied to the inner surface before the syringings are begun, will keep the skin of the hands unblistered. I cannot certainly recommend this hot-sewage cure as being of the pleasantest, but one, or at most two syringings, will thoroughly cleanse the trees of filth, and unless the foliage were kept healthy and vigorous, all the rest would be of little avail.

In the evening of the next day syringe the trees again with clean water heated to 130°, that is as hot as the hands can bear it, and the young fruit and foliage will support it very well, subdued by its passage through the air from the nozzle of the syringe. As regards the ravages of the green, brown, black, and blue flies on fruit trees, the modern system of pinching hinders the very existence of the aphid family.

As sewage contains nothing like the proportion of phosphate of lime that is taken from the land by the different crops, I have a special tub into which all the bones are thrown after they are done with in the kitchen. What oyster-shells we may become possessed of during the year are also tossed into the tub. At this time of year the united contents are pounded on a tough flagstone with the back of a heavy hatchet, and then passed through a sieve with a quarter of inch mesh, all that will not pass through the sieve is pounded over again till all is sifted, and the bone dust is scattered on the vegetable quarters along with the other matters when the ground is being prepared. I intend to sow some on the fruit-borders this spring, as soon as the weather will allow me, and then point it in immediately. Another tub we have contains the sweepings of the chimneys, for soot and common salt are excellent applied as a top-dressing to the soil in showery weather. The first abounds in ammonia, and the second given in moderate quantities promotes the decomposition of the organic matters in the soil. We have this winter burnt a great quantity of

wood in the grates, and I have had the mere ashes sifted from the cinders, and kept dry to apply as a top-dressing on a piece of ground intended for Potatoes.

I take this opportunity to describe my method (see No. 164) of working the ground for Potatoes, and culinary vegetables. It is best to divide the ground into three parts. The sediment from the tanks is cleared out once a-year, about this time, and mixed with road-scrappings in a large opening dug out in a back yard, adding what I call my muck-pie—that is, the refuse from the garden, and all the sweepings, excepting tree leaves, that collect from time to time about a small house and grounds in the country.

Early in autumn, the sooner the better, the above is wheeled to the piece to which it is to be applied, the third of the ground that was occupied with the first and second early Potatoes, and the early Cauliflowers and Broccolis. This patch undergoes a thorough trenching, and the mixture is well worked into the body of the soil, and once in three years is sufficient. The other two divisions are bastard or half-trenched as soon as possible after the Brussels Sprouts, Winter Broccoli, and the Turnips from the ridges are successively cleared away. Just before Potato planting, in March, I cause dry mortar rubbish to be spread over the compartment which was thorough-trenched the autumn before last; and quicklime fresh from the kiln, at the rate of seventy bushels per acre, to be slaked upon it, is spread over the surface, and immediately pointed in on the third division, or that which I mentioned first, to act on inert organic matters, which, if not subjected to the action of the quick lime, would remain in an inactive state probably for years. This spring to the second compartment I intend to apply sifted wood ashes, and on the third piece soot and salt, by way of a change. I have also a fourth part of the garden devoted to Strawberry, Onion, and "flying-crop culture," which, at least, in regard to the Strawberries, is made to undergo a three-course system, and where the spent Cucumber-bed and sewage prove their handywork.—UPWARDS AND ONWARDS.

LONGING FOR SPRING.

SHAKSPERE makes Bolingbroke exclaim—

"O, who can hold a fire in his hand,
By thinking on the frosty Caucasus?
Or wallow naked in December's snow,
By thinking on fantastic summer's heat?"

And although the power of imagination be to a degree transposing, yet none, I suppose, would gainsay the great bard's decision on this point of its impotence to change one season to another, or to make us feel warm while we are shivering with cold. Yet, still, how thoroughly we relish in thought the opposite to that which we possess—how we live and enjoy by anticipation!

To make this clearer by example. I never enjoy "Thomson's Summer" so much as in winter. Let me have the book before me when the frost is on the pane—how I relish this hot picture—

"The raging noon; and, vertical, the sun
Darts on the head direct his forceful rays.
O'er Heaven and earth, far as the ranging eye
Can sweep, a dazzling deluge reigns; —"

Or, again:

"The rage intense
Of brazen-vaunted skies and iron fields."

Perhaps this delight of the mind in the opposite to that possessed by the body is the reason, or is one reason why books abounding with descriptions of rural scenes and pleasures have been most frequently written while their authors resided in towns; yea, in the great city itself, and even within its prisons. For instance: Bloomfield wrote his "Farmer's Boy" in a London attic; then by the power of imagination he beheld, and, doubtless, himself enjoyed with keen relish—

"Stop'd in her song, perchance the starting thrush
Shook a white shower from the Black Thorn bush,
Where dew-drops thick as early blossoms hung,
And trembled while the minstrel sweetly sang."

Was there ever, I would ask, a more delicious rural picture seen and penned, when the author's eyes fell on nothing more fascinating than the common-place furnishings of a journeyman-cobbler's stall?

I have been led to these thoughts by the winterly prospect as I gaze out of my study window upon the broad snow-covered valley to my right, and the umbrageous park to my left.

The other night when coming home from a penny reading meeting (I hope our readers support penny readings—aids to education as well as sources of great amusement to the working classes), my feet at each step scattered the snow then embrowned by thaw, for the snow seemed literally flowing away. But, lo! a change came in the night, the frost returned, and gently, most gently, and amply too, fell the beautiful snow. In the morning I beheld a scene rarely to be looked upon, except in a picture. There had been no wind, hence every little branch and tiny twig bore its white load, and bright and glistening lay the snow, in park and garden, just toned down and its beauty heightened by a slight mist. There was the snow upon the earth, and upon everything growing up from the earth, whether it was a lofty Elm, or a dwarf standard Rose. A delightful picture until the thaw came, and the trees again stood out black and naked, though still knee-deep in snow. By-the-way, some of my trees and shrubs were broken before I could get the snow shaken off them. Still on the ground lies the snow, too deep to disappear before a gentle thaw, though it is dirty and ribbed with brown now, the surface of the ground looking like a dissipated man's face on the morning after the poor wretch has had what he calls, "A night of it."

By-the-way, how strangely and variously frosty weather alters, and not for the better, the human countenance. A summer beauty, dependant for smooth complexion on soft air, looks now no beauty at all. Then, perhaps, a well-featured face is now spoiled by a very red nose—another has a blue tinge on nose and cheek—another has a deep purple hue, as if "painted with port," as a lover of that now old-fashioned wine expressed it, and so on, while in contrast, a ruddy face of other weather is now pale, almost dead white; and even dear little children, the soft-cheeked and the peachy-bloomed, look mealy and queer. N.B.—Let no one have his, or especially *her*, likeness taken in frosty weather.

But, I was speaking at the beginning of this paper of the mind flying off from the present, and hugging in thought a future season. Strange feeling this of a wonderful yearning longing. Crabbe could not exist without a sight of the sea at least once a-year, and the longing at times came over him so strongly, that it is said he one day mounted his horse and rode forty miles to gratify it. Then, again, Sir Walter Scott could not live many months, without a peep, at least, at the Heather. I find myself amid the snow the victim of an intense longing for spring. I pine for a sight of the spring flowers—the Primroses, the Celandines. Oh! give me spring flowers! Golden Alyssum, varied Polyanthus. Oh! for a Jonquil in my border, a bunch of Wallflowers on my table, or a single Hepatica in my tiny specimen glass, to look at while I write. The spring flowers bloomed badly here last year, and shall I have any this year? is my thought after that dreadfully dry summer. Garden disappointments, like disappointment in love, are terrible things, hard to bear, long to recover from.

Four years ago, that wicked insidious black frost, a very villain, for he came on Christmas-eve, a jovial kindly time, and villain-like in disguise, for I was not aware of his dire presence—"Only a bit of a frost this morning," I said, as I drew up my blind—further a villain, for he killed the young and tender; for that year the Hybrid Perpetuals flowered late, and all things in the garden were, what the gardeners here call "froom"—that wicked frost (to close this long and disjointed sentence), killed my Cloth of Gold Roses on my south front. I knew not my loss for a long time, I began to suspect, then to fear. Then, to buoy up my hopes, the higher branches sent out tiny shoots; but these were merely owing to some little sap left, for the first sun made them wither and die. So in April, knife in hand, I attacked my precious darlings. Sweep down came the long branches, and bare and miserable stood my wall—desolate and naked. I have not quite recovered that blow, neither have I got losses as yet to equal their predecessors; but I have taken the precaution to sink the budded part below the surface, and I mean to go into flowers with full zest this spring, and

Spring—the word makes a fountain of joy to spring (alas! a pun even when writing sentiment. I am a candidate for the hospital for "Incurables"), up in one's heart; but

"Is not the sweet spring tide
Worth all the changeful year beside?"

A garden-loving friend of mine, as soon as Christmas is forgotten, and the days begin to lengthen, is, she tells me, in the habit of getting down from the bookshelf, for her young people's pleasure and edification, all her books relating to flowers, and the country and spring, so that their hearts may, with even more than young hearts' readiness, meet the season. A garden—who loves it not? I read the other day, that Jeremy Bentham, strange old oddity as he was, utilitarian as he was, yet loved to walk round his garden several times each day. True, indeed, he spoiled the whole thing by the fearful name he gave to these walks. He said they were his "Ante-prandial circumgyrations." Dear me! what a name to give to a stroll round one's garden! Then, I wonder, what sort of garden this philosopher of matter-of-fact circumgyrated. Was it more than what the Scotch call a "Kail-yard"—a garden of mere usefulness? Did he merely circumgyrate Onion and Leek-beds, or Potato patches, or compost heaps? Had he flowers?—the man who said, that "The game of pushpin had done more good in the world than poetry?"

But to let Jeremy Bentham's ghost rest in peace, or still "circumgyrate," as in the flesh, with "white hair, long and flowing, his neck bare, in a quaker-cut coat, list shoes, and, "Oh! the old guy!" white worsted stockings drawn over his breeches' knees." Return we to the far pleasanter subject of the spring. How I long for it, and what a compensation to life's evils is a love of Nature. It abides—if it leaves one for a-while it returns like an old love, all the stronger for the brief leaving. May we be blessed with a genial glorious spring; may we watch, with the sun shining above us, the tender green of the hedges. Then, when the spring comes, how I love to walk round, not "circumgyrate," my garden each morning; and watch another, and yet another flower, first showing a little point of colour, then open into full bloom. May my hope be realised. Perhaps the colder the winter, the warmer will be the spring. I trust it will be so.—WILTSHIRE RECTOR.

HOW TO KEEP PEARS.

SOME three or four years since I was much struck with the tendency in our winter Pears to ripen prematurely in cool wet seasons, and particularly so in the remarkable season of 1860. Somewhere about that period I became acquainted with the fact, that late Pears in the warmer parts of France, particularly the Doyenné d'Hiver (our Easter Beurré), were often in fine perfection as late as May. There was nothing new in what I deduced from this—viz., that our late Pears were not fully matured: hence premature quasi-ripening and decay. In 1861 I commenced my experiment of ripening Pears in a greenhouse, on a bench formed of slates about 3 feet from the glass. The roof over the slates was shaded from the time the Pears were gathered, in October, till the end of November, and the shading then removed. The autumn Pears ripened slowly and kept well; the late sorts unusually well till, in January, I found some of the kinds inclined to shrivel; I then placed them in flower-pots with covers to them, still keeping them in the greenhouse, and in the end I had several kinds that ripened well in May.

So far I was encouraged, and last autumn (1864) I determined to endeavour to reduce Pear-ripening and Pear-keeping to a system, the *modus operandi* of which I now give.

I selected a span-roofed orchard-house, 60 feet long by 14 feet wide, with a floor of boards slightly raised, so as to be about 6 feet from the roof. Towards the end of September we commenced to gather the autumnal-ripening Pears; as they were brought in some were laid in small heaps, from one to two pecks in each, and others in single layers. In the course of October the winter Pears were gathered, and placed in the same house and after the same manner. The Brown Beurré, Urbaniste, Beurré Hardy, Gansel's Bergamot, Conseiller de la Cour, Doyenné du Commerce, Louise Bonne, Marie Louise—in short, all our finest autumn Pears

ripened slowly and thoroughly, so as to be of excellent flavour. The late Pears did not shrivel, but seemed to be in a very happy condition. In the severe frost that occurred about the 18th of December last some hot water was let into the pipes to keep it out of the house, and on the 24th of the same month all the unripe Pears were placed in new 13-inch flower-pots, in some cases two or three sorts in a pot, divided by thick layers of old newspapers; other pots with a wooden cover to each were then placed in the fruit-cellar, where the temperature during winter averages from 40° to 42°. They have continued to ripen slowly and well, and I am inclined to think I shall have a good supply of Pears till far into April. Joséphine de Malines is just now in perfection, and Bergamotte Espéren and L'Inconnue (Van Mons), just commencing to ripen.

The most remarkable effect of this thorough ripening of Pears in a house full of light and warmth has exhibited itself in Winter Nelis and Beurré d'Arenberg; some fruit of these two kinds were gathered in October, and divided into two portions, part being at once placed in the fruit-cellar and part in the orchard-house; they were gathered from one tree of each sort. Those placed at once in the cellar ripened early in December; those placed in the orchard-house till the 24th of December and then removed to the cellar have ripened as follows:—the Winter Nelis at the end of January, lasting to the 8th of February. The Beurré d'Arenberg are only just now (February 14th), ripening; they are plump, of a bright yellow, and juicy and excellent, as are the fruit of Passe Colmar treated in the same way. These very late Pears are still firm and sound.

The rationale of this mode of ripening late Pears seems to me to be as follows:—The Pears exposed to a warm light climate for two months after being gathered throw off a considerable portion of watery juice, leaving the remainder more inspissated and saccharine; thus tending to the preservation of the fruit for a lengthened period of time.

I have not found late Apples benefited by being placed under the same circumstances as late Pears, because they seem not to require more warmth than our climate usually gives to fully ripen them, with the exception of American Apples; but after one of our wet cloudy summers, which always occur at intervals, many kinds would doubtless be improved by being placed under glass.

Apples keep so well in my fruit-cellar that I have never thought of any other mode of preserving them. At this time (February 14th), the early autumn Apples are sound and plump, and I have often known Hawthorndens to keep till late in March. As this cellar seems to be almost perfect as to its fruit-preserving qualities, I will in a few words describe it, so that if an opportunity offers it may be imitated.

On the crest of the hill, formerly called "Bonks Hill," on which stands my dwelling-house, there was formerly a fosse some 20 or 30 feet wide, forming a semicircle to the north-east: this was evidently excavated for the purpose of a temporary defence. From its position this formed a dry ditch, and my great-grandfather thinking, I suppose, it would spare the heavy expense of digging, threw an arch over it so as to form a vault upwards of 30 feet long and 12 feet wide. As the crown of this arch came within a foot of the adjoining surface rain would have penetrated, and thus make the apartment damp and unfit for a wine-cellar, for which it was intended, he therefore built a large shed over it, so that the earth resting on the arch should be perfectly dry. This is now my fruit-cellar. It has at one end an iron-grated window, which is closed with a shutter in dry, cold, windy weather, and a door at the other. It is perfectly frost-proof, so that Potatoes, uncovered and lying only within a foot of the strong but loose-fitting door, which is truly a ventilating door, never become frozen in our most severe frosts. In this dry, but not too dry, place, with slight ventilation and a very equable temperature, varying from 40° to 44°, from November till the end of March, fruit is kept in great perfection; it seems, therefore, to approach to what a fruit-room should be.—T. R.

THE INGRAM TESTIMONIAL.—In another column will be found a list of subscriptions to the fund for presenting Mr. T. Ingram, of the Royal Gardens, Frogmore, with a testi-

monial in recognition of his services to horticulture, and as a mark of the high esteem in which he is held by all who know him; and we take the opportunity of reminding our readers that the subscription list will shortly be closed.

VISITS TO GARDENS PUBLIC AND PRIVATE.

MR. JAMES VEITCH'S, CHELSEA.

KNOWING that I was somewhat interested in the new system of double-roofing which my friend Mr. Bewley of Blackrock had originated, and of which he entertained such favourable opinions, I received a courteous invitation from Mr. Veitch to inspect a range which he had lately had constructed on that principle; for with that enterprise which ever characterises this well-known firm they had determined on testing it by their own personal experience, and had (as Mr. Bewley indeed told me when visiting his gardens last summer), sent over their foreman for the purpose of seeing it in operation and taking plans; and although the month of February is not a very agreeable time of the year for visiting gardens, yet as I knew in this wonderful establishment there is always such an *embarras des richesses* that something is always to be seen and learned too, I ventured on the undertaking one day last week, and have put down a few jottings of what I saw and heard. I may at the same time observe that, great as was always the interest attaching to this establishment, it will in future be doubled; for since the death of old Mr. Veitch, the Exeter establishment having been abandoned, the whole energies of the firm are concentrated on their London nursery, comprising not only the splendid concern at the King's Road, but also about thirty or forty acres at Coombe Wood. To London, then have been transferred, not merely the most choice of the plants that adorned the Exeter establishment, but also, what will tend more to the increase of the interest, their able and successful foreman, Mr. Dominy, and the more experienced of their Exeter men. When, then, the alterations now making are completed, there will be so rich a treat for all who really love flowers and plants, and can appreciate them whether they grow them or not, as will make the homeopathic Saturdays at South Kensington hide their diminished heads; and now in its present state there is to every plant-lover abundant materials, even in the depth of winter, to make him forget all the dreariness without in the rarities and beauties within.

The range of double-roofed Orchid-houses is 120 feet long, in three divisions, while a T-shaped house at the end is devoted to cool-house Orchids and other plants which will bear a lower temperature. In these three divisions the Orchids are arranged according to the temperature of the climate from whence they come; the division nearest the boiler averaging a temperature of 70°, the middle 65°, and the further end 60°. The advantages which Mr. Veitch has found already resulting from the plan are great economy of fuel and pipes, for in the very warmest part of the house the heat is maintained by a single flow and return on each side; and even this gives so much heat that it is found necessary to brick in the pipes. Air-shafts are also inserted, by which a constant supply of cool air enters the air-chamber in the centre of the house, and is there heated and dispersed. Besides this, the temperature of the houses is entirely deficient in that dry heat which one so often finds, and there are not those constant variations of heat and cold which are so injurious to the health of plants. These were just the points that Mr. Bewley urged, and I am glad to find that in other hands his success is repeated.

And what shall I say to the plants that these houses contained?—the splendid masses of Dendrobiums and Cattleyas; the glorious Vandas; and Phalænopsis Schilleriana with its curious mottled leaves—more beautiful, however, in their younger state than in their more mature growth—and amabilis with its snow-white flowers; Cypripediums of all sorts, including a new one brought from Manilla by Mr. J. G. Veitch (and which I believe is to be named *levigatum*), now flowering for the first time, and promising to be quite as fine as, and very distinct from, all other known varieties; and then there is that fine plant of villosum which fetched so high a price at Stevens's sale. I can only say that they were the very perfection of growth, that the rarest and most

beautiful forms are there, and that the eye of the connoisseur and the simple lover of flowers would alike be gratified by the fine display there made. The cool house would be, perhaps, of more general interest, as it implies the possibility of Orchids being more generally grown; but I may be allowed to express here an opinion, which I ventured to broach to Mr. Harry Veitch, and which he confirmed—that a great many people will burn their fingers at this experiment, that Orchids will be attempted in this way, which will never do, and “cool house” receive a much more liberal interpretation than the case warrants. Well, in this cool house there were a number of fine plants of *Barkeria*, both *Skinneri* and the higher-coloured variety *superba*; *Cologyne cristata*, which, albeit it may, according to Mr. Gordon, do better in an East-India-house, was doing well here; *Odonoglossum* of various kinds, *navium* and *Pescatorei*, and its variety *superbum* just coming into flower; and above all, the very varied and beautiful *Lycaste Skinneri*. Talk of the varieties in florists' flowers, this Orchid beats them all; for not only were there no two flowers alike from the different bulbs, but the same bulb produced flowers differently marked. So free-flowering, too, is it, that on one plant in a small pot I counted ten flower-stems. Mr. Warner has told us how well this lasts in flower in a drawing-room; and those who possess a house which they can heat would do well to see if they cannot grow this very beautiful and free-flowering Orchid for the winter and spring decoration of their houses. Perhaps in this house, however, the plant was a beautiful mass of *Cephalotus follicularis*, which was truly wonderful for its extreme vigour and health, and with its curious little bearded pitchers a most interesting object.

All who have of late years visited Mr. Veitch will remember the beautiful hardy fernery, which was one of the gems of the place. Its place is at the end of the range of Orchid-houses; and it is now to be removed, and a house built there for the purpose of bringing Orchids into when in flower, so as to prevent the necessity of visitors going through the range of houses, oftentimes, especially to ladies, very oppressive. Interspersed as they will be with Ferns and other plants, it will always be a pleasing and interesting spot. But let it not be supposed that therefore Ferns are to be neglected; on the contrary, this is only preparatory to a complete change. A space of ground which now adjoins the greenhouse fernery is to be covered in with glass; and in this a new hardy fernery will be formed, laid out with the same taste as characterised that now in course of removal. Thus, as in the case of the Orchid-houses, there will be a gradation in temperature—the hardy fernery first, then the greenhouse, and then the stove Ferns; so that they who are afflicted with filicomania may gratify it to their heart's content, for every rare and beautiful form will be found there—and what is more exquisite than the lovely and delicate foliage of this widely dispersed tribe? In the greenhouse fernery were some large masses of that glorious terrestrial Orchid *Disa grandiflora* and its variety *superba*, which Mr. Veitch has imported from the Cape of Good Hope, equalling if not excelling all other Orchids in the brilliancy of its colouring, being, moreover, so easy of culture, that any one with a greenhouse from which frost is excluded may grow it.

It would be simply impossible for me to even enumerate a tithe of the novelties and rarities that I saw in range after range of houses. Amongst fine-foliaged plants stood conspicuous *Maranta Veitchii* with its singularly marked leaves, almost looking as if three separate leaves had been one by one eliminated from the bud and marked with the most striking colours, and for which the premier prize was awarded at Brussels. Then what glorious masses of *Azaleas*! looking pugnacious, I fancied, as if to say, “I have my gloves on ready for the conflict in May and June.” Who can adequately describe the fine collection of Pitcher-plants, un-qualified, probably, in any establishment in the kingdom? Then there were such plants of *Lapageria rosea* and *alba*; that fine *Anthurium*, about the best plant sent home by Mr. Weir, and whose name is still in *nubibus*, whether it is *cordifolium* or *Weirii*. If the latter, it will almost stand like an epitaph if the next accounts of Mr. Weir correspond with the last. Then to lovers of softwooded plants there was a whole house gay with variegated *Geraniums*, in which Mr. Harry Veitch has been trying some curious

experiments, which I hope may produce something. One quarter of the ground, which has been recently taken in and enclosed with a wall, has been devoted to the trying of new plants; this will be a sort of *sanctum sanctorum*, under special watch and ward. Then the Japanese Museum in itself affords occupation for a morning's investigation, while I had but a couple of hours to run through it all.

Ere I left, however, I acceded to a most kind invitation, not only to go there again in May, but also to visit Coombe Wood; and the results of my visit I hope to communicate. I trust, however, that what I have said may induce some of your readers when visiting London to go down to Chelsea to see this world-famed establishment. They may depend upon it that they will find it at any time far better than a weekly show at South Kensington; and they will meet, moreover, with what is rather a scarce commodity in that fashionable locality—the utmost civility and attention, and a desire to impart any information which it may be in the power of those who manage the concern to give. It has now been for three generations in the same family—a most unusual thing—with every prospect that the fourth will be as active, enterprising, and intelligent as its predecessors.—D., Deal.

THE STRAWBERRY LA CONSTANTE.

EVER reluctant to obtrude myself on the horticultural public, I cannot refrain from giving my humble experience as to the merits of that excellent Strawberry, *La Constante*, especially as I perceive that in your Number of the 14th inst., that eminent grower, M. Gloede, of Les Sablons, mentions my name in connection with this branch of horticulture, making allusion to this Strawberry in particular.

I have been very closely engaged lately in my own avocation proper, or despite my antipathy to dabbling in troubled waters, I should most probably have forwarded you a line ere this on so interesting a subject. I have not, however, been altogether a passive observer of the opinions lately expressed in your valuable Journal; on the contrary, I have closely scanned them, and weighed their merits.

After a careful observation of the habits and peculiarities of upwards of two hundred varieties of the Strawberry, I can safely say that no sort has given me greater pleasure or satisfaction in its culture, than *La Constante*. I can, therefore, fully endorse the opinions expressed by M. Gloede in every respect. Any doubt as to its hardness, indeed, had never entered my mind, never to my knowledge having lost a single plant of it from any cause whatever, since I commenced its propagation some four or five years ago, from two plants kindly presented to me by that unobtrusive but devoted fragarian, the late Mr. Nicholson, of Eaglescliffe.

The only difficulty that first occurred to me from such small beginnings, was its reluctance to emit its runners, especially early in the season; but this, now that I have a good stock of plants, I must confess I regard as one amongst its numerous merits; for what amateur or private grower of this delicious fruit likes to see his beds choked up with innumerable runners? and look what constant labour is required, especially in large plantations, to repress this tendency in many sorts. This opinion may not be concurred in by those who grow this variety for sale; but even here, as in the case of the amateur, the only thing needed is a little extra vigilance in looking after the earliest runners, and taking care to get them well rooted as early as possible in ground properly prepared for the purpose. Let the earnest fragarian only once accomplish the production of a good crop of fruit from first year's plants of *La Constante* (and it is easily done), and all other difficulties will soon vanish.

The early planting and the necessary attention to the plants to accomplish this end, will at the same time banish all ideas as to the tenderness of this variety, if any exist; but with me, as with British Queen, the question of tenderness has never arisen. I never mulch or in any way protect my plants in winter. A Strawberry that required such petting would very soon in my grounds, exposed as they are, be dug up. I place my trust, on the contrary, in thorough exposure, in deep trenching, incorporating the soil well with a moderate quantity of well decomposed manure in the

process, and allowing the ground to remain some time exposed to the sun, air, and weather. It is then tolerably firmly trodden over the lines at the time of planting. I plant as early as I can possibly raise my plants (the British Queen annually, from which I get the largest crops; the plants are then dug in), and under this treatment I know of no kinds more hardy, or that stand the most inclement weather better than *La Constante* and *British Queen*.

Add to the above *Carolina Superba*, and you have the best three varieties at present in existence. Any private grower who thoroughly understands the culture and requirements of these three sorts for his main crops, can afford to speculate with the almost endless candidates that compete for his favours for early and late production; but after all, to the above varieties he can always appeal for a never-failing supply of the handsomest and best fruit in size, form, colour, and flavour combined that the greatest connoisseur need wish, throughout the principal part of the Strawberry season.* There are, unquestionably, several others of very great merit, which it would be almost invidious to particularise; but every disinterested grower must, I think, admit that the above three sorts are unrivalled.

I am anxiously looking forward to the results of next season, to test the merits of *La Fertile*, *Modèle*, and one or two other seedlings, from the extensive *répertoire* of that distinguished raiser, M. de Jonghe, the raiser also of *La Constante*. I am informed on the best authority, that the former will be found to possess all the leading characteristics of *La Constante*, added to which it produces larger fruit, is extraordinarily prolific, and is more easily propagated.

With regard to this latter point, I have already expressed my opinion. Time, however, will show whether *La Constante* will thus be doomed to the tomb of the Capulets. Till such is the case I shall pin my faith to *La Constante*, as one of my greatest favourites, and enlarge my stock of it accordingly.—WILLIAM RODEN, M.D., *The Grange, Kidderminster*.

VAGARIES OF MUSHROOM SPAWN.

I HAVE been a successful cultivator of the Mushroom in a proper house, and, not having one of those houses at present, I made up two beds in November with dung prepared in the usual way, and spawned them at a declining heat of about 80°. These beds I made in a cold shut-up shed. I formed them at the end, 4 feet from the ground, the face of the bed having an angle of about 30°. Under these beds I have a chamber, in which I kept up a regular fermentation with dung and leaves, and I always maintained a heat in the beds of about 70° for at least six weeks, with a covering of hay on the top. I then allowed them to cool down by degrees to 55°, which heat they have been at for a month, and yet I do not see the least sign of Mushrooms. I have examined the beds, and I find them one mass of spawn, the threads of which are as thick as a stocking needle. The average temperature of the shed is about 40°. Do you think this is high enough? or can you give any instructions about them? Do you think, if I raise the temperature of the house, that I shall be successful?—H. LEAH.

[It is quite possible that you may yet have a good crop of Mushrooms, though the description of the spawn in the bed, run as thick as stocking needles, makes the matter doubtful, unless there are also plenty of small threads not much thicker than the points of needles. By the bed being so filled with these threads, it seems to prove that all the first operations were well and successfully performed; but it is just possible that your fermenting material, in the chamber below the bed, made the bed at times too hot, whilst the atmosphere of the place was becoming rather cool. In such a bed, in a shed, applying heat from below must be done with great caution. It is safer to keep the bed about 60° by top-covering; and, if the bed is so kept, a lower temperature of the atmosphere around the beds is of

* *La Constante* will fruit nearly as late in the season as *Elton*, and other late kinds, and it may not be generally known as yet, that in consequence of its fine colour, unique, penetrating, racy flavour, and its firm texture, it makes one of the very best preserves. I am aware it will require more than ordinary fortitude to commit so good a fruit to the preserving-pot, but so long as the same species will grow an equal quantity of fruit fit for all purposes, why not, as with everything else in horticulture, grow the superior kind?

less consequence. Even to keep up a moist atmosphere of 55° we would prefer the fermenting-heap to be on the floor of the house, and not below the bed. What we should advise now is, if the beds are dryish, to water them with water at about 80°, leaving them, however, rather dry than wet; then place a little clean straw over the beds, and over that some hay, or even some warmish litter, increasing the quantity until you find the bed, on the surface, warm (about 80°), when you put your hand on it, beneath the straw. A little fermenting matter might also be placed at each end of the bed, so as to block up the outlets of the chamber. As soon as the Mushrooms begin to appear, lessen the thickness of the covering. This heat on the surface will encourage the working and productiveness of the spawn upwards; but too much heat, and continuous, must not be given, or the spawn will thread, and not produce. The heat, thus applied moderately at the surface, does little to heat the spawn, or injure it, to any depth. We have more faith that this system will answer, because you have allowed the beds to be not higher than 55° for a month. Try this addition of temperature at the surface. Of course the temperature of the shed (40°) is too low, but then, by this covering, you can make the atmosphere, near the surface of the bed, 60° or more. Treat your bed out of doors in the same way. Examine the bed, and, if cold at the surface, clear it all over; lay on some clean straw, then a little warm litter, and then a good portion of the present covering, but see that the heat does not increase too much. Perhaps the bed with this 2 feet of covering was too hot. We never had better Mushrooms than in ridges out of doors; but they require some care in changeable weather, and the covering to be proportioned accordingly. We shall be glad to hear how you succeed. We have had fine crops five or six weeks after spawning. We have had, also, fine crops three months after spawning; and we could not tell why the latter were so long in coming. From six to seven weeks is a common time.]

ROYAL HORTICULTURAL SOCIETY.

At the weekly Show, on the 25th instant, the objects specially invited were *Narcissus*, and of these no exhibitors came forward. A few, however, belonging to the Society, also a number of *Lilies* of the Valley, were placed upon the table. Messrs. Lee, of Hammersmith, sent *Phalenopsis Schilleriana*, *Dendrobium speciosum*, *Franciscea confertiflora*, in excellent bloom, and a nice specimen plant of *Hedera fuchsoides*; Mr. Bull, Chelsea, a fine pan of the Irish Fern (*Trichomanes speciosum*), *Cyperus alternifolius variegatus*, and *Pandanus elegantissimus*; Mr. R. Cox two seedling *Cinerarias*, of no particular merit; and Mr. Greeves, Bayswater Road, a window-box, flower-basket, and bouquets for sale.

GLAZING WITHOUT PUTTY.

THIS is by no means new. I remember the late Mr. Knight, of King's Road, Chelsea, pointing out to me, some twenty years ago, a house that was glazed in the way your correspondent speaks of. The bars were painted and the glass fitted on, and three or four coats of thick paint filled up all the crevices and fixed the glass; but the plan had no particular advantage over putty, as thick paint was, on the whole, more costly, and the work was no better done. There was another contrivance adopted at the same time to save the lower squares of each light from breaking; for the condensed moisture penetrated between them and the timber end of the light they overlapped, and the water expanding in frosty weather broke the glass. To remedy this a plate of zinc was put across, and it yielded to the expansion of the frozen water. I believe Messrs. Cottam & Hallam, whose position as hothouse builders was very high about thirty years ago, introduced a plan of glazing without putty, but I cannot call to mind what. It must, however, not have succeeded very well, or it would have been well known ere this. There are serious objections to putty, I for one admit, but with all its faults we have not yet found a substitute for it that is not otherwise still more defective. I hope, however, to see this remedied.—J. R.

THE ARBORETUM—DECIDUOUS TREES.

(Continued from page 133.)

ÆSCULUS (THE HORSE-CHESTNUT).

THE Horse-chestnut is a tree of the largest size, and ranks among the most beautiful of all our deciduous trees, both for its magnificent foliage and remarkable flowers. It is the best-known of exotic trees, and has been more extensively planted than any other of a purely ornamental character. So frequently is it met with, that the fact of its not being a native would not be suspected by others than those who have made plants a study, and subject of inquiry. The Horse-chestnut, and its kindred tribe, the Pavias, are best adapted to light soils, upon which they will thrive, although they may be sterile; in tenacious clays they are always stunted and unhealthy.

ÆSCULUS HIPPOCASTANUM is the common Horse-chestnut, and is too well known to need description. Several varieties of it have been raised in different nurseries, and distributed under various names. In some instances the distinction hardly appears sufficient to warrant the assumption of the difference ascribed to them. The following may be regarded as being the best.

Æ. rubicunda differs from *Æ. hippocastanum* by its leaves being fuller and more uneven on the surface, and of a deeper green. The tree is also smaller, and of less vigorous growth, the flowers have more red than any of the species, and planted as a single specimen on a lawn, or in a park, this tree is without doubt the most ornamental of the family. *Æ. rubicunda* is sold in some nurseries by the name of *Æ. coccinea*, *rosea*, and *carnea*.

Æ. OHIOENSIS is found wild on the banks of the Ohio, in North America. It differs from the common kind in having larger and more undulating leaves, and its fruit is said to be about half the size of that of *Æ. hippocastanum*. Loudon was of opinion that it is nothing more than a variety of the common species, and far inferior to it in point of beauty. By another authority it is stated that it has never flowered in England, but this is not correct, since one of those in the Royal Horticultural Society's Garden at Chiswick, is recorded to have bloomed in 1835, and very probably since.

Æ. GLABRA, another North American species, of which little is known, is described as a low tree with leaflets of a pale green, very smooth. "The whole plant is comparatively glabrous, and even the fruit partakes of that quality."

It would thus seem to be a distinct variety, but it must be confessed that more information is necessary to be able to designate it accurately.

Æ. GLABRA is a native of the forests of Kentucky, in

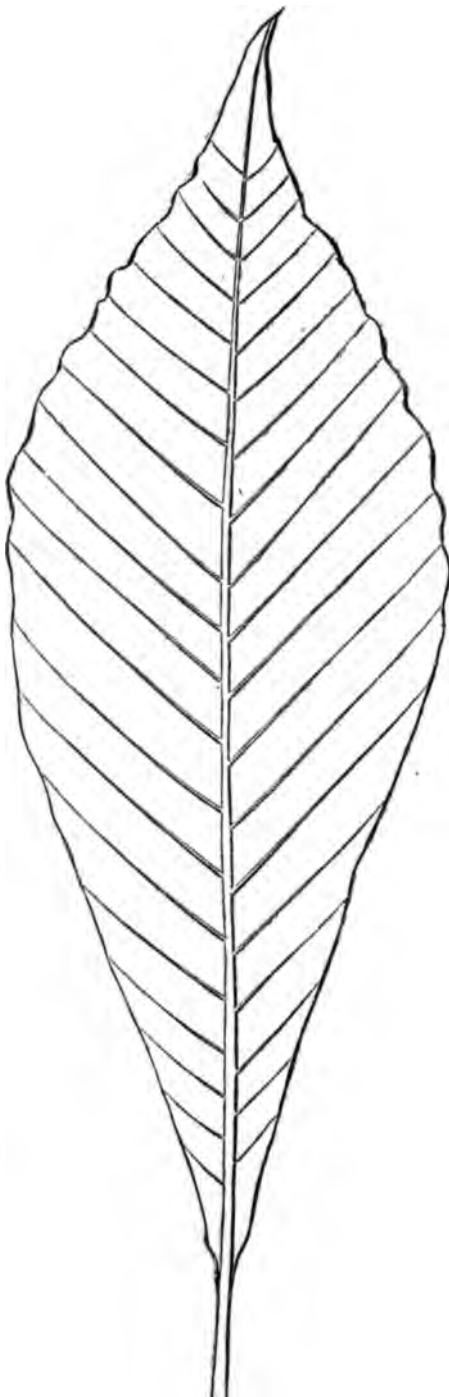
North America, and resembles the preceding. "It is of somewhat more robust growth, and its leaves are not quite so smooth." The proximity of its native home to that of *Æ. ohioensis*, and *Æ. glabra*, would suggest a doubt of its being a distinct species.

A cut-leaved variety of the Horse-chestnut is sold under the name of *Æ. laciniata*, and others bearing the names of *Æ. nigra*, *Æ. præcox*, and *Æ. tortuosa*, have been mentioned. The facility with which plants may be raised from seed has, undoubtedly, produced variations, and in so handsome a genus as the *Æsculus*, such cannot be unacceptable, and if really good and distinct, would be appreciated, if arboriculture can be restored to its proper rank and share of attention.

PAVIA.

The Pavias are so closely allied to *Æsculus*, that it seems best to describe them with the latter, although it is a departure from the alphabetical order originally intended to be followed. The Pavias differ only from *Æsculus* in their converging petals and spineless fruit; they are also much smaller in size. It has been complained that the Pavias are short-lived, but if they are raised from seed, instead of being grafted upon the Horse-chestnut, which is very frequently done, it will be found that they not only endure for a longer period, but attain a stronger and finer habit. It is true that the propagation by seed would render them liable to vary slightly, but that defect, if any, would be more than counterbalanced by an improved plant. All the species known in England are from North America, where they are called Buck's Eye Chestnuts; but in the colder parts of India two species have been discovered, called *Pavia indica*, and *P. punduana*, which may be found capable of existing in our climate, and may add some new feature to the genus.

Loudon remarks on the *Æsculus* and *Pavia*, "That nurserymen who propagate varieties of these and other select-flowering trees, ought always to keep specimen plants in their own grounds, from which to take scions for the propagation of varieties remarkable for some peculiar or distinctive feature. Such varieties should not be raised from seed; because, though there can be no doubt but that the progeny would bear a general resemblance to the parent, yet the particular feature for which the variety was cultivated might be wanting. Early and late varieties of all showy-flowered trees are very desirable, because they prolong the season of blooming. Early-leaving varieties of trees, and trees which retain their leaves late



Pavia flava.

season, are also desirable, and in this respect the chestnut varies exceedingly." As all the species of *A. rubra* and *Pavia* seed freely, and hybridise almost as with each other, the *Æsculus* also with the *Pavia*, a abundance of variety might be raised. All sent recognised are beautiful, and it is all to be regretted their number can be increased.

PAVIA RUBRA (The Red Pavia). — This is a slender tree from the hills of Virginia Carolina. It produces flowers of a brown-red colour in May.

PAVIA FLAVA (The Yellow Pavia). — This differs from *P. rubra* being a much smaller plant, assuming the character of a shrub. As its name implies the flowers are yellow, the leaves are pubescent and much paler than those of *P. rubra*. It appears to be the linking link between *Æsculus* and *Pavia*, as it has some of the character of the former. It loses its foliage in autumn, and of summer, so it is frequently bare in the beginning of Sep-

ÆSCULUS. — This is considered rather than a tree, as it is seen above 5 or 6 ft. in height, when young, but at large size when upon *Æsculus* *tanum*; it is then a short-lived.

PAVIA ALBA is described on as being a distinct variety, thought to be in cultivation. There is a lot of it in the Horticultural Society's garden at Chiswick; its flowers are variously yellow, and purple.

PAVIA MACROSTACHYA is another little attended though it is known in all the most features of its name is the *Pavia*, which is very appropriate. It was, a plant in the Royal Horticultural Society's grounds at Chiswick. Will some member endeavour to retrieve the loss of getting this tree almost extinct and which are

exist at Chiswick, propagated and distributed? I am for a world of good to be done in this way.

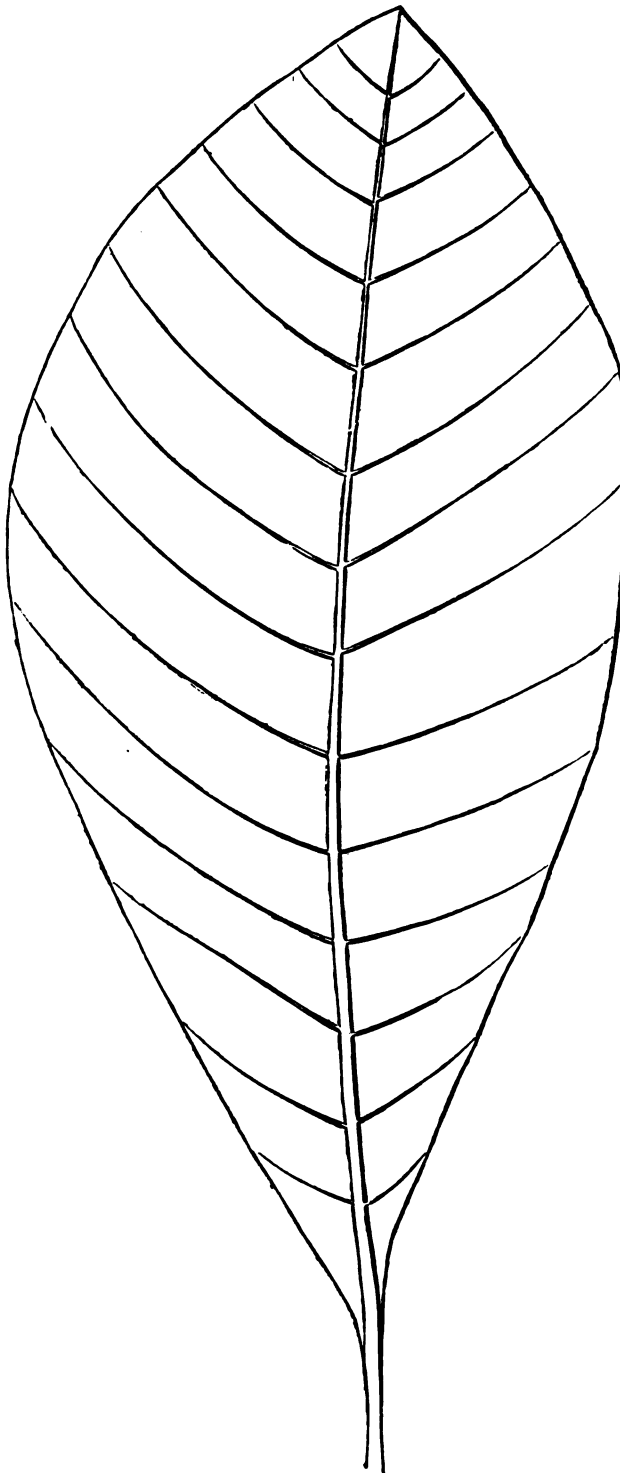
PAVIA MACROSTACHYA (The Large-fruited Pavia). — London

thought this kind intermediate between *Æ. hippocastanum* and *P. rubra*. "The leaves are large, smooth on the upper surface, and shining. The flowers are nearly as large as those of the common Horse-chestnut, but the petals are less spreading,

and of a pale red colour mixed with yellow. The branches are spreading and loose, and the whole tree has an open, graceful appearance, quite different from the compactness of form, and rigidity of branches which belong to most of the varieties of *Æsculus* and *Pavia*."

P. MACROSTACHYA is a shrub with loose racemes of white flowers, with long projecting stamens, which give the spike a fine fringed appearance. It is also remarkable for its large deep green leaves, entire, and very even in their outline. "This variety comes into flower about a month or six weeks later than the other *Æsculaceæ*, and continues flowering, in the case of large plants, on moist soils, for three months, or longer, forming one of the greatest floral ornaments of the shrubbery at a season when very few trees are in flower. The flowers are agreeably fragrant, and the spreading leaves being supported on long slender petioles, which from their graceful disposition, combined with the feathery lightness of the racemes of flowers, gives the whole plant an air of elegance quite different from any other species of dwarf *Pavia*."

—ADOLPHUS H. KENT.
(To be continued.)



Pavia macrostachya.

GOOSEBERRY SEEDLINGS. — I THINK your correspondent at page 131, need not be dissatisfied with the result of his experiment. To have raised two really new and excellent varieties is no small success. I would, however, recommend any who wish to distinguish themselves in this line, not to trust to chance seedlings, but to artificially fertilise. Some years ago, I took White-Smith as a female parent, and fertilised with Hedgehog and Pitmaston Green Gage. Four plants of each were raised. Those from Hedgehog were coarse and inferior to both parents.

Among the other four were two good Yellows—one remarkably good, which has been preserved, but, unfortunately, it seems a bad bearer. So my own success is not great, but I think I took the right road.—S. B.

THE MIRABELLE PLUM.

"Once upon a time," when Louis Philippe was king, I happened to be strolling about the *potagerie* (kitchen garden) at Versailles, taking notes and making the best use of my eyes. Among other things I was much struck with the enormous quantities of the above-mentioned kind of Plum. Large basketsful were arranged in a row, and more still being gathered. I, thinking the king a wise and economical ruler, inquired if they were not for market, but was promptly told that they were highly valued by the royal family, and were used for compotes and preserving to an enormous extent. I did not then appreciate them, for uncooked they were dry and, to a certain extent, flavourless. This pretty little Plum must not, however, thus be judged, for preserved whole, without sugar and without water, in bottles, it acquires the most delicious aroma ever smelt or tasted, and this is more powerful when the fruit are placed in a pudding or a compôte and served up hot. When made into a jam without their stones they are also most delicious, the flavour being so rich and delicate. In the neighbourhood of Metz it is called *Mirabelle de Metz*, and is grown to a great extent at Nancy, and throughout the east of France.

The tree seems to require a rather dry climate, and would doubtless succeed well in the calcareous soils of the east of England. The last summer being dry and warm the crop here was abundant, and I never remember seeing anything in fruit culture more interesting than the pretty bush-like trees, not larger than a good-sized Gooseberry bush, literally covered with their bright golden fruit, spotted with red, oval, and about the size of small Damsons.—T. R.

GAY ORCHIDS, AND ORCHIDS FLOWERING IN WINTER AND SPRING.

"B. H." would be much obliged by being informed which are the twelve best and gayest Orchids, and also by having a short list of those which flower in winter or early spring."

When one essays, in compliance with the wishes of a correspondent, to name "the best and gayest twelve" Orchids, out of, perhaps, a thousand or twelve hundred species in cultivation, he finds it needful to guard himself by two caveats. First, he cannot have a personal knowledge of all the species grown, particularly the more recent introductions; secondly, he can give only his own opinion; and in a matter of taste so arbitrary as the comparative beauty of flowers, others may very legitimately demur to his conclusions. I think the following dozen may be named as the very *crème de la crème* of this glorious order; though it would be easy to make up the number to twenty with scarcely a diminution of the claim. The letters prefixed indicate that those kinds flower in the colder period of the year; L, late in autumn, occasionally protracted into winter; W, November to February; E, early, say March or April.

Aerides Fieldingii, or *maculatum*, or *nobile*.—These three are, perhaps, the finest of this lovely and fragrant genus.

L. *Cattleya labiata*.—The great size, and the rich crimson purple of the lip, distinguish this species.

Dendrobium *Devonianum*.—The flowers are large, of a rich cream colour, purple tipped, with two orange clouds on the lip. A noble and lovely species.

D. *Falconeri*.—Flowers very large; the sepals bluish white, petals and lip cream, purple-tipped; the lip has a deep purple throat, margined with orange. A glorious species, much exceeding even the preceding.

Lælia purpurata.—Flowers very large; sepals and petals pure white, or flushed with rose; lip ample, rich crimson-purple. A worthy companion to *Cattleya labiata*.

S. *Odontoglossum Pescatorei*.—Makes a lovely spike of broad flowers, white, with the crest yellow.

O. *phalanopsis*.—White, except that the central area of the lip is of a fine crimson. Flowers on twin spikes.

W. O. *triumphans*.—"Branched spikes of flowers; the sepals and petals yellow, barred and spotted with crimson; lip white, edged with dark rose. Magnificent and rare." *Hanc non ridi*.

Phalanopsis amabilis.—The charming white Moth-Orchid of the Indian Isles.

Saccolabium guttatum.—Throws out long, compact, pendulous, cylindrical spikes of small flowers, white splashed with purple.

L. *Vanda carulea*.—Flowers large, pale lilac-blue, in a loose spike.

W. V. *suavis*.—Flowers porcelainous; white spotted with purple, unspotted beneath. Noble and handsome, both in foliage and bloom.

As "B. H." says nothing about price, I have not considered this element in making the above selection; but as some of those named bear excessively high prices, I sub-

but obtainable at more moderate rates: some, indeed, are very cheap.

E. *Aerides odoratum*.

E. *Cattleya Mossii*.

W. *Epidendrum vitellinum*.—A noble spike of orange-scarlet blossoms. A greenhouse species.

L. *Lælia Perrinii*.—Sepals and petals of that lovely light rosy purple, which is almost peculiar to Orchids; lip deep crimson-purple.

W. *Lycaste Skinneri*.—Flowers very large; varying much from waxy white to crimson. A greenhouse species, almost hardy.

L. *Odontoglossum grande*.—Flowers very ample, yellow clouded with dark brown, tiger-like.

Oncidium excavatum.—A fine panicle of broad flowers, rich yellow with a few red spots at the bases. Perhaps the noblest of this vast genus.

W. *Sophranitis grandiflora*.—A minute block-plant, with large flowers of crimson scarlet. A lovely gem, cultivable in the greenhouse.

The following ordinarily flower in winter and early spring, besides those already mentioned:—

FROM NOVEMBER TO FEBRUARY.

Angraecum bilobum

eburneum

sesquipedale

Ansellia africana

Arpophyllum spicatum

Barkeria elegans

Skinneri

Bletia Shepherdii

Brassavola glauca

Digbyana

Brassia caudata

Burlingtonia amœna

Calanthe vestita

Cattleya maxima

bicolor

Walkeriana

Warcewiczii

Cœlogyne cristata

Gardneriana

media

Cymbidium eburneum

giganteum

Masterei

Cypripedium insigne

purpuratum

venustum

Dendrobium chrysotoxum

fimbriatum

heterocarpum

macrophyllum

moniliforme

nobile

Pierardii

pulchellum

speciosum

Wallichianum

Lowii

Epidendrum fragrans

rhizophorum

Gongora maculata

Grammatophyllum speciosum

Ionopsis paniculata

Lælia acuminata

albida

Lælia aurea

autumnalis

peduncularis

furcata

superbissima

Leptotes bicolor

Limnædia rosea

Lycaste Deppel

crucata

macrophylla

Miltunia concata

Karwiniki

Odontoglossum maculatum

membranaceum

pulchellum

Rosellii

bicolor

Oncidium Barkeri

bicolor

Cavendishianum

diversatum

flexuosum

incurvum

leucocentrum

oblongatum

unguiculatum

Forbesii

orthochrysum

varicosum

Phajus Tankervillei

Pleione maculata

Wallichiana

Schomburgkii

Stanhopea eburnea

Sophranitis carnea

violacea

Stenorhynchus speciosus

Trichocentrum fuscum

Trichopilia tortilis

Warren Lindeni

Zygopetalum crinitum

brachypetalum

Mackayi

IN MARCH AND APRIL.

Arpophyllum giganteum

Bletia patula

Burlingtonia fragrans

Camarotis purpurea

Cattleya amethystoglossa

Skinneri

Chylis bracteata

Coryanthes speciosa

Cypripedium caudatum

hirsutissimum

villosum

Dendrobium aggregatum

ancum

Cambridgeanum

crepidatum

Dalhousianum

densiflorum

Farmeri

fimbriatum

litiflorum

primulinum

Epidendrum aurantiacum

bicoloratum

crassifolium

Hamburyanum

maculatum

Stamfordianum

Lælia cinnabarina

flava

majalis

Leptotes serrulata

Odontoglossum Warneri

Oncidium amphistomum

sarcodes

sealei

sphacelatum

Phajus Wallichii

Saccolabium miniatum

Trichopilia suavis

Vanda cristata

insignis

Zygopetalum rostratum

Perhaps the above will scarcely answer to "B. H.'s" request for "a short list;" but it is easy to select, and I could not well omit any known to me as meeting the conditions.—P. H. G.

FAILURE OF HYACINTHS IN GLASSES.

Mr Hyacinths in glasses have given up growing. They did very fairly at first and have excellent roots, but the leaves are only about 1½ inch long, and the flower-spikes, only half protruded, are beginning to burst into flowers. I have changed the water several times, using sweet min

water, and put a piece of charcoal in each glass, but the water soon becomes offensive, smelling strongly of sulphuretted hydrogen. The glasses have been and are kept in the window of a warm room by day, and in a warm corner by night. Crocuses in pots under the same conditions have come into flower.—V. G. C.

[Failure of Hyacinths is a common occurrence this year, and we believe that it arises from the bulbs being taken up in Holland before they have been perfected, in order to supply the very early demand for them in this country. We fear that you cannot aid your Hyacinths. Try the effect of adding one drop of spirit of hartshorn to the water in each glass. Change the water every week, adding the same small quantity of the hartshorn to the fresh water.]

HEATING A SMALL CUCUMBER-HOUSE.

BEING a poor man, with every minute of the day occupied in business, yet being passionately fond of flowers, and horticulture generally, I do manage by getting up early, and going to bed very late, to carry out Tom Moore's advice, "that the best of all ways to lengthen our days, is to steal a few hours from the night;" finding, also, some truthful consolation in Longfellow's words—

"If you want a thing done, you must do it yourself, John."

So much for preamble.

In my spare mornings and evenings last summer I built myself a small house, which you would designate "a pit," I think. I bought your "Heating Manual," and "Green-houses," &c., and capital little books they are, but I cannot find exactly what suits my case in heating by gas, as I want to do. Well, this little house, allow me to call it so, is 18 feet long, 4½ feet wide (don't laugh), 4 feet to the glass in front, and 7½ feet to the glass at top. I have sunk the path 1 foot or more to get head room. I take 18 inches off the width for path, as though I yield to no man in respect for crinoline, I do not wish to see it in my little place, albeit I am, what Miss Mitford called us all, a *vagabond*, alas! a bachelor! Well, 4½ feet will be 54 inches, 18 from that will leave 36 inches for border in front. Now, in this space 18 feet long, and 3 feet wide, last June I put a little half-spent dung from my frame, some loam and leaf mould on the top, and put in six Cucumber plants, strong ones, and six Melons. I trained them up the roof, and cut scores of Cucumbers, and fifteen Melons, ripe, and pronounced of good flavour. This was to the astonishment of my friends who laughed at my enthusiasm at first. Now, I want to heat this little place. I am so engaged as to fear that the fire of an ordinary flue, &c., would be neglected, and I have a great fancy for gas. I noticed recently what strikes me as a capital little boiler, and I think I can have one made of galvanised iron by my neighbour the tinker, much cheaper, and as effective. Please say if earthenware pipes (3 or 4 inch, which?) would do, and where they can be procured, what length, and would one-inch or two-inch lead pipes do to connect with the boiler? One pipe to run along in front close to the ventilator for top heat, the return-pipe to go, covered with clinkers, &c., below the soil. I want to use this house early in spring for propagating, raising seeds, &c., so I should not want to begin Cucumbers very soon. If I have an air-pipe in the highest part of the flow-pipe, there will be no need of an air-pipe in the boiler, I suppose. If the enclosed plan will heat 50 feet of four-inch pipe, and my piping will only be about 36 feet, so much the better for me. One more query I must trouble you with, and that is the best kind of Cucumber to grow in a house. Last year I had what should have been Ayres' Black Spine, but it was a white one. The Melon was Bromham Hall, but out of the six plants there were two quite different from the others.—*CUCUMIS SATIVUS*.

[We congratulate you on your success. The cutting so many Cucumbers, and fifteen good Melons from a low house or pit 18 feet long, 4½ feet wide, 4 feet to the glass in front, and 7½ feet to glass at back, is proof that in such a house you have done well. The sinking of the 18-inch pathway to obtain more head room was a good idea, and we presume you used board or brick on edge to keep the three-foot bed in front of your pathway, so as to keep all clear for your-

self, if you debar the dear girls and their crinoline. Now, you want to heat this little narrow place, and wish to have bottom and top heat, and to do it with gas, which for your circumstances has many advantages, as by regulating the tap you can also regulate the power of the gas jets, so as just to keep the water warm. But for this we believe the simplest plan would have been a small furnace outside, and a small flue some 4½ inches wide, inside measure, to go below your bed, and return by the pathway to the chimney. Or if you merely wished top heat, a small gas stove, or a small brick Arnott's stove would have answered every purpose. To make either of these answer for both kinds of heat, however, would require a chamber round them, and more trouble in the management. On the whole, then, we approve of such a little copper boiler as you allude to, as made by Mr. Lynch White, and if the water is not heated above 170° or 180°, there will be no necessity for the iron jacket being placed round it. No doubt your neighbour will make one of galvanised iron cheaper, but it will not last so long. We see no necessity for the air-tap in the boiler. If you have a small supply cistern at the highest point of your flow-pipe, that will be quite sufficient.

We would not advise you to have earthenware-pipes in such a nice little house, but to have two nine-foot metal lengths for top heat, and the same for bottom heat. You will thus do with about three supports for your pipes, one at each end, and one in the middle. You would want more supports for earthenware, and if a leak took place below your clinkers, &c., it would be difficult to get at it. With nine-foot lengths, which, if three or four-inch will cost from 2s. 6d. to 3s. per yard, you need have no more than one joint in the middle of your house. We would not object to the boiler being 12 or 15 inches in height instead of 10½.

Now, as from what you say, we should judge you wish the matter to be as simple as possible, so that you and your neighbour may do all the work required, this is how we would advise you to do. Get your boiler of strong galvanised iron if you like, or even block tin, only it will not last so long. Set the boiler so far raised above the floor that you can turn a rough broom of hair inside frequently to keep it clean, and make sure that the smoke-opening, though small, is kept clear, that the gas-smoke may escape out of the house instead of being sent back again. The space of outlet should, however, be small, and the throat should have a plate across, to send the heated air back again like a damper, with two other small holes at the side to let it escape. Then the next thing is to have a flange, or a hole made at top and bottom for a one-inch lead pipe to be firmly soldered to each place, for connecting the top and bottom pipes for heating. These will heat quickly if made of galvanised iron or tin, but they will not last a lifetime like the cast iron ones. Now, as already said, we will only have two joints in these pipes, and that is in the middle of the house. At both ends of the house we will use wooden plugs for the ends of the pipes, and through these we will take the connecting lead pipes. Thus for the flow-pipe, we will set it in its place, make a plug—say 6 inches long, with a hole in the middle of it scarcely an inch in diameter, and through that, and fastened securely with white lead, we will place the end of the inch flow-pipe from the boiler; the return-pipe will be done the same way. Then we fasten the joints of the pipes in the middle, seeing that they properly fit, and after putting in some tow and red lead at the sockets, we fill up firmly with the same, using a thin spatula and a mallet, or even Portland cement, pushed firmly in when as tough as it can well be made. Then at the further end, we use a similar plug to each pipe, and connect them together with a similar piece of lead pipe. Thus without bends, curves, or more regular joints than two, the means of circulation are complete.

But you have as yet no water in the boiler or pipes, and have left no means for letting it in. We have thought, however, of all that. We would in placing the flow-pipe of nearly 18 feet make the farther end some 3 inches higher than the end next the boiler. At that highest end we would drill a hole—say 1 inch—in the pipe, behind the plug, fix a one-inch pipe into it securely by one end, and the other end securely into the bottom of a small cistern, to rest on the pipe—say 12 inches by 15. Wood will do as well as anything, or zinc or galvanised iron. Here you put in the water slowly,

and when full this cistern will always tell you how the pipes are supplied, and will serve as an air-outlet as well. We prefer filling such a place slowly, that the air may escape as the water takes its place. The lower pipe should descend as gradually to the boiler as the upper one rises to it. One remark more as to this lower pipe. The higher it lies in the bed—that is, the higher above the bottom, aye or even the top, of the boiler, the better it will act. And, again, if the bottom of the bed is concreted so as to hold water, at least to a degree, and the covering of clinkers is so thin as to be near your plunging-bed, or growing-bed, the more will the pipe tell as a promoter of bottom heat. It is true that heat will rise, but it is equally true that if such a pipe be covered with a foot of rough rubble, the heat will be in a great measure confined to the rubble, especially if this is placed very open, and there is no admittance of air to these openings. If a few small openings from the pathway of the house are in connection with these openings, the heat will ascend more freely. If the material become very dry, or the bottom of the bed be caked with dryness, the heat will not ascend well; but either in your bed for cuttings, or for Cucumbers, you can leave a few small drain-pipes standing up, one end above the soil, and the other among the clinkers, and pouring water in will cause the heat to rise more kindly and uniformly. These tiles may be plugged or opened as deemed necessary. We shall be glad to hear how you manage and succeed. Of Cucumbers, Carter's Champion, Munro's Rabley, and Sion House Improved, are good for such a house. Bromham Hall is a good Melon; Turner's Gem, and Golden Perfection, are also good.]

COMMENDATIONS AT THE CRYSTAL PALACE ROSE SHOW.

WILL you allow me to suggest that it would, I think, give great satisfaction to exhibitors at this Show if good stands of flowers not in the prize-list were highly commended or commended, as is done at poultry shows? We cannot all take prizes, but I must say that it is not satisfactory, after all one's trouble and expense, to be altogether unnoticed. The expense of a few cards would be so trifling, and the gratification given to exhibitors so great if this plan were adopted, that I am surprised no one has thought of it before.—P.

SUCCESSFUL VINE-LIFTING.

HAVING read in your excellent Journal an article on Vine-lifting, in answer to a correspondent signing himself "J. H. Nairnshire," and as facts in gardening are usually worth recording, I will state my own experience on the subject.

In a lean-to vinery of about 30 feet in length, lofty and well built, the Vines were planted about fifteen years ago, and bore well for several years; but owing to over-cropping and high feeding with manure water (than which nothing spoils a Vine-border sooner), they gradually dwindled and suffered so much from mildew, shanking, &c., that it was necessary to do something by way of remedy. My employer suggested cutting the old Vines out and replanting with young ones, but not liking the idea of doing this without giving them a chance, I obtained his permission to give them one more year, in which, if possible, to regain their character. I at once set to work to take out the old border and re-make it. I had every handful of the old soil taken out to the depth of 5 feet, and to my consternation found that the few roots of the Vines had gone straight down 5 feet through the border, and after making their way through the drainage had penetrated into the subsoil some 3 or 4 feet farther, which made me almost despair of doing anything with them, as the only roots that I could preserve were about the thickness of a man's thumb, and about a yard long. I worked away and made a new border of the usual materials, having first properly drained it, but this time only 3 feet deep. The Vines were replanted on the 13rd of December, 1883, which, I believe, according to the usual theory on the subject, is the wrong time, but the result proved that this rule is not without exception. Let me add, however, that I was obliged to do it then or not at all. The border was then covered up with 2 or 3 feet of stable

manure, which upon examination a short time afterwards, I found had set the roots working nicely, in fact, the border was like a mild hotbed. The Vines, which were formerly trained two to a light, were every alternate one cut down to the front sash, and those remaining close-pruned on the spur-system, and painted with a mixture of soft soap, sulphur, &c.

The Vines were gently started in the beginning of March; they broke well and strongly, and produced 116 bunches of well-flavoured and well-coloured fruit, the bunches averaging 1½ lb. each, being more than double the crop of the previous year, and they were quite free from mildew all through the season.

The sorts are Chasselas Musqué, Sweetwater, Wilmot's Black Hamburgh, and Muscat Hamburgh, and I must not omit to mention, that the house has to do duty as a warm greenhouse. The Vines have made capital strong wood this season, perfectly clean, and, in fact, have done all that could be desired of them.

I have detailed this experiment in the hope that it might throw some light on the cause and cure of mildew, or, at any rate, if it only cheer some brother in distress and prompt him to do as I have done and find a remedy, I shall be well rewarded.—BUENTWOOD, P.D.

WORK FOR THE WEEK.

KITCHEN GARDEN.

AFTER so much frost and snow as we have had at intervals during the last five or six weeks, the soil, where due attention was paid to trenching, ridging, and forking, may be expected to have received much benefit by their purifying and pulverising action, and to be now in a good condition for some of the principal crops. As we may now expect drying winds, less intense frost and more sun, no time should be lost in making good all deficiencies in autumn plantations of Cabbages, and getting in forthwith a new plantation of the strongest and healthiest plants to follow in succession. A small portion of seed of some good variety should also be sown in a sheltered corner, in order to have plants at command and that may be depended upon at the moment they are required. The space allotted for Carrots, Onions, Beet, &c., should be constantly forked up on suitable mornings, exposing to the influence of the atmosphere as much surface in as rough a condition as possible, in order to have it in good working order by seed-time, which is now fast approaching. *Cauliflowers*, make a fresh sowing in the frame, and look over the seedling plants that are up, also the seedling plants of Lettuces, &c., and sprinkle a little dry sand or dry earth amongst them, as they are very liable to damp off at this season; also thin them out if crowded, as nothing tends more than this to cause them to fog-off. *Celery*, make a small sowing in heat. *Parsnips*, now is a good time to sow the main crop in ground deeply trenched, with the manure at the bottom; it is a very useful vegetable, and none pays better for care in cultivation. *Potatoes* of an early sort may now be planted on a warm south border. Trenching and manuring may still be carried on. Let the edgings of walks be made good, and the gravel turned and rolled, fresh gravel being added where necessary. The side walks or alleys should have a good coating of coal ashes laid on; this is a good material for the purpose, as it does not form a puddle after a frost or in wet weather.

FRUIT GARDEN.

In carrying on the operations of trenching up fruit-tree borders it is advisable to examine the roots of luxuriant-growing trees, and remove some of the largest; it is better, however, to follow a regular system of root-pruning, because it enables us to keep the roots near the surface. Pruning and nailing must be completed without delay, and the interruption in the work, occasioned by the late inclement weather, must be made up for by corresponding energy now.

FLOWER GARDEN.

Avoid all indiscriminate use of the knife in pruning. We would recommend cutting back the shoots of *Moss* and *Provence* Roses to three or four buds, because if not pruned in this severe manner the heads will soon become straggling and weak, and cease to produce vigorous flower-buds. *Hybrid* *Provence*, *French*, *Hybrid* *Bourbons*, *Damask* *Roses*, &c., should be pruned more severely.

petals, and Hybrid Perpetuals should have the strong shoots shortened to within six or eight buds from the bottom, removing all the small spray and cross branches and spurs which have produced bloom last season, leaving the shoots at regular distances. Hybrid China Roses are so impatient of the knife, that if pruned in the same manner as recommended for the preceding classes they will scarcely put forth a flower. The shoots ought by all means to be left nearly their full length, merely cutting off the tips of the shoots, and thinning some of them out where too thick. The Sweet, Hybrid, and Austrian Briars should be pruned in the same manner, and an abundance of bloom will be the result. To have a succession of flowers of the summer varieties it is only necessary to leave some trees unpruned till April, they will come in a fortnight later. In pruning cut close to the bud, the wound will soon heal over. Commence the pruning and nailing of Roses and climbers against walls. Complete all new work and improvements which have been retarded by the severity of the weather. See that Heart-ease, Pinks, &c., in beds or borders are not thrown out of the ground by the late frost. If they are loose fasten them. Proceed with planting-out biennials as soon as the ground is in a fit state, and prepare a little ground in a warm corner for sowing Stocks and some of the best of the annuals for transplanting.

GREENHOUSE AND CONSERVATORY.

Orange trees in tubs or pots should be carefully examined in order to ascertain whether or not the roots are in a healthy state, and those requiring more room should be shifted at once. In many instances, however, it may not be possible to afford large specimens a shift: in that case remove as much of the surface soil as can be done without injuring the roots, and replace it with a mixture of good loamy turf, broken bones, decayed cowdung, and sand, and see that the balls of the plants are in a moist healthy condition. Manure water is of great service to Orange trees, and may be applied freely at all seasons, particularly when they are starting into growth. It is quite impossible to use the syringe to advantage in many conservatories, and under such circumstances when the weather is favourable the flowering plants should be removed to one end of the house, and the twiners, &c., given a liberal washing with the engine, which will also greatly assist in keeping the glass clean. This should be done before the twiners start into growth, as there will be no danger of injuring the tender foliage while the plants are in a dormant state. As the season advances give more air to the houses. See that suitable composts are ready under cover for potting and sowing seeds. Some of the hardwooded plants may now be propagated by cuttings where a gentle bottom heat can be kept up.

STOVE.

Young plants of Aphelandra, also of Poinsettia and Euphorbia fulgens, raised from short cuttings now, and kept growing in a cool part of the stove all the summer near the glass, will make nice dwarf-flowering plants by winter. The cuttings are to be rooted in moist heat. Many of the *Justicias*, *Eranthemum pulchellum*, and some of the *Begonias* may be treated in a similar manner; and all these will be found exceedingly ornamental in the winter months. *Eranthemum pulchellum* has fine blue flowers, those of *Justicia flavicoma* (or *Calytricha*) are yellow, *Begonia Martiana* is deep rose pink, and the *Euphorbia fulgens*, *Poinsettia pulcherrima*, and *Aphelandra cristata* and *aurantiaca* are of various shades of red and scarlet.

DUNG-PIT.

Of all the plants which delight in dung heat there are none which are so much at home in it as *Clerodendrons* and *Ixias*, and hence some nice stocky plants of each should be potted and placed under its influence at once. The former delight in a free open soil, consisting of loam, peat, and leaf mould, with a little rotten cow-dung and silver sand; and the *Ixoras* in pure turfy peat, with charcoal and gritty sand. If the plants are well rooted, give a liberal shift, but do not overdo them. In addition to these plants may be named *Dipladenia splendens*, *Cryptoceras reflexum*, *Allamanda cathartica* and *A. grandiflora*, *Luculia gratissima* and *Pinciana*, *Gardenias*, *Schubertia graveolens*, *Stephanotis*, &c., and such softwooded plants as *Geaneras*, and

Achimenes. In the management of the pit keep a fine growing heat of from 60° to 70°. Shut up early in the afternoon, but open the sashes a little before leaving for the night.

PITS AND FRAMES.

Sow seeds of *Mignonette*, *Ten-week Stocks*, *Cockscombs*, *Balsams*, and many tender and half-hardy annuals.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

OUT of doors much as in previous weeks, the ground being too hard up to Thursday night to attempt doing anything. On Wednesday and Thursday we uncovered *Caniflowers*, *Radishes*, *Lettuces*, *Endive*, &c., that were merely protected from the frost, and had been covered for eight or ten days. Peas on turves, Beans, &c., placed between rows of Potatoes in frames, were uncovered oftener, as the little heat below them would otherwise have caused them to spindle weak. Wednesday and Thursday were good days for uncovering what had been a long time covered, as though the air was mild, there was no sun, and the plants would be gradually injured to the light. After being covered a long time—say a fortnight or a month, it is as well not to give them bright sun all at once. Extremes of all kinds should be avoided. Young Cucumbers in frames, with little below them except tree leaves, are slightly drawn, as in the severe weather we could give them little air, and could only uncover part of the glass opposite the plants without reducing the temperature rather much. A few of these mild days with a little sun, will make them all right. Sowed a few more; it is always advisable to keep a few plants for succession.

Put up another bed for Cucumbers, to be in readiness, making the bottom of half-sweetened dung and leaves, and the top of sweet leaves. This is making the most of the material, the rank steam will become sweet enough before it passes through the leaves. We scarcely ever turn over a heap of fermenting material several times in the old-fashioned way, as that would lessen our limited supply, and send a great quantity of heat into the open air, which we would like to be used in giving some things a fair start. We also use few leaves in a heap of dung until the dung is heating and fermenting freely, as too much heat from the dung would waste the leaves; but in all cases where this rough-and-ready mode is followed, care must be taken to have 1 foot or 15 inches of thoroughly sweet fermenting matter over the surface of the bed. Such beds, made of material not too much decomposed, keep up a more regular heat, and for a much longer time, than from dung and general fermenting material too much decomposed. We make it a rule, however, to make our beds wide enough to be able to bank up the outside of our frames almost to the top, so that the heat of the enclosed atmosphere is a good deal derived from the boards or wall inside, instead of having to pass through the soil, &c., first, which gives some chance of burning the roots. This banking-up and protecting the outside of the bed with long litter or branches, renders fresh linings of little importance until the season is well advanced.

Here, on the question of *Linings*, we would with all due respect, say a word on pigeon-holed walls for pits for forcing, in reference to the answer to "Dromio," page 137. No doubt pigeon-holes are very useful, but when they are present, one of two things must be attended to—either the fermenting material for the linings must be sweetened before using it, or care must be taken that no steam from such linings can pass into the atmosphere, where Cucumbers, Melons, or other tender plants are grown. The latter may be done, either by having a secure-floored chamber beneath the bed, or flues, on the McPhail system, or by keeping the soil of the bed firmly secured against the walls above the height of the pigeon-holes. What we wish to say, however, is chiefly this, that several times we have wrought pits with solid walls by linings with very great advantage, and with great economy as to preparing the dung for other beds and frames.

One advantage of the solid-wall system is, that if you use ordinary care in giving air, no deleterious steam can pass into the place. In one case, inside, we made a nice little bed

of sweet fermenting material in the usual way, and in that case the linings were used to keep up the bottom and top heat. In another case, the inside of the pit was roughly filled, very openly, to the suitable height, with stones, clinkers, &c., a thin slate bottom put loosely over all, and on this the soil was placed. Some small drain-pipes every 3 feet or so, were fixed inside back and front, one end communicating with the rough chamber, and the other end opening into the atmosphere of the pit. This prevented what might have taken place from an enclosed non-conducting body of air, and to a certain extent kept the enclosed air of the pit in movement. Owing to changes, we do not work pits in the same way now—in fact, have none with linings; but the solid walls which we did work, were built in three ways. One of these pits had nine-inch piers opposite each rafter, the rest was single brick on bed, laid in first-rate mortar made with washed sand that made it almost as good as cement, and in this, opposite the centre of each light, a stout slate 1 inch thick, 3 feet by 2, was fixed in the front and the back wall. Given plenty of good fresh horsedung from the stable, and such a pit, unless in the severest weather, could easily be kept at a temperature of from 70° to 80°.

A second pit had nine-inch piers opposite the rafters, which were 4½ feet apart, and the rest of the wall was of 4½-inch work from brick-on-bed. This also was built with first-rate mortar, not lime and mud. Provided we had the material, we never had any difficulty in obtaining plenty of heat. The third case was a nine-inch wall. It had been pigeon-holed for Pines; but, as there was no heat but linings, it used to give us too much internal moisture in winter, and so we blocked the holes all up. In turning linings against such a nine-inch wall, we took care to keep the hot half-sweetened material next the wall, and the fresh, new material more at the outside; and frequently we have felt the inside of the wall in the morning, and found it as warm as a flue. In such a thick wall it would be necessary to have a wide lining in winter, and in mild weather extra heat could be neutralised by extra air.

Where there is abundance of fermenting material the nine-inch wall would do well enough, but on the whole we would much prefer the 4½-inch wall, or brick-on-bed, and the smallest possible joints, with the best mortar. In all these cases abundance of manure must be pre-supposed. In the cases in which we used such pits we banked them up pretty well to the wall-plate, and there was no want of fresh stable manure when wanted. We brought it and placed it round these pits at once, and thus made them the preparing and fermenting-heaps for making beds below frames, removing it as it became sweet enough for that purpose, and supplying fresh, but always leaving enough at the sides of the pit to prevent a sudden check from want of heat. We found this a very economical mode of sweetening the dung for other beds, where the least rank steam would be destructive; whilst, as respects these pits themselves, no steam could pass through the walls. The only thing that required care was to watch the direction of the wind in giving air, so that no rank steam should blow in at the opening. We hope our worthy coadjutors will excuse this statement, as we believe there are many cases where solid-walled pits, heated by linings, would be as useful as those with pigeon-holed walls, and in some respects less dangerous. Last season we were much grieved to see the wrecks of Cucumbers and Melons in such a pigeon-holed pit, belonging to an enthusiastic amateur. He had brought the mowings of his lawn to the lining; a crack, unobserved, had separated the soil inside from the wall of the pit, and up this the rank steam ascended, carrying ruin with it.

Gave more room to Dwarf Kidney Beans, sowed more took the chance of the thaw to take up more Sea-kale and Rhubarb, and put them in the Mushroom-house. Put, also, a few barrowful of dung on a bed now preparing for Mushrooms, and cleaned and swept those bearing. We have constant proofs of the retentiveness of vegetable life. The last bed was pretty green with a drop of Oats. Now these must first have passed through the stomach of the horse, and then been pretty well heated in a heap before being formed into the bed, and still they grew freely. In moderation, we do not think they do much harm. If much covering is used that soon settles them. When a bed is backward, we prefer a little surface covering to giving much heat below the bed.

This covering increases the temperature of the air close to the surface of the bed, and after some experiments and much observation, we do not consider Mushrooms grown in the dark at all inferior to those grown in light. In one sense they often please better, as the buttons are generally so white.

Ice Collecting.—On Tuesday we had a rare day at this work, filling our ice-well to the crown, and passages as well. From the severe frost on Monday, the ice was not only fully 4 and 5 inches thick, but it was almost as hard as flints, and the breaking was no joke. In fact, we could not break it very much, only sufficiently so to obtain a lot of powdery matter to fill up all holes among the larger pieces, so as to exclude air. We believe that if such ice had been cut in blocks and carefully built together, with a little water run over so as to fill up every cranny and be well frozen, it would have kept better than with all our pounding and smashing; but we could not spare time for any such nicety. Even the breaking we gave told upon the arms and shoulders of the breakers. People who have the chance should try and store up a heap, as, independently of the luxury, many a useful life has been saved in the case of fevers, &c., by a timely application of ice. We could envy no owner the feelings that would lead him to demur for a moment to filling a basket in such an emergency.

In the course of time the covering of the dome of our well and passage has been reduced, and the earth that is left has been made like a honeycomb, by the combined efforts of rabbits and rats; but as soon as convenient we must add to the thickness of earth, and take means for preventing the future burrowing of all such vermin.

FRUIT GARDEN.

Out of doors little or nothing has been done. In-doors Strawberries in bloom have been placed in the best places; but those swelling do so but slowly in such weather. Regulated Vines; sprinkled those starting. Placed a foot or so of warm leaves next the ground on the first vinery-border, as the covering put on previously had become wet and cold from the snow soaking through it. Even though we removed a good deal of it on other places, we were glad to let it remain as the best of all protectors. It has thus saved vegetables and field crops very much. Sprinkled Peach trees just as the buds were opening. In the Peach-house noticed the ants very busy on one part of a tree, and feared that all was not right; and true enough there were two or three patches of our old enemy the brown beetle. We at once dusted all we could see with hellebore, and in a few hours washed the place where we saw them with strong soft soap water, and again with Gishurst. We did think we had entirely destroyed them, and were much annoyed at their re-appearance. We washed the whole of the woodwork and the trees with hot soap-water: syringed all woodwork, trees, pipes, &c., several times with the same at a temperature of from 160° to 170°, or even more; then we removed carefully about 1½ inch of the surface soil, sprinkled the surface of what was left with hot water, and then top-dressed afresh, washed the walls and painted the trees all over with Gishurst, tied trees, and filled the house with bedding Geraniums. Now, after all this care some perfect insect or some eggs must have escaped all our heated water and painting. We thought we had quite got rid of the worst insect ever we met with; and we must carefully watch for the slightest appearance of them, even of a single one, and give it no chance by its amazing fecundity to fill the place again. After such care we begin to fear that we introduce such enemies at times in our fresh soil and our manure waterings when taken from the dunghill. It would be a safe plan to boil the latter before using it when cool enough; but then, so few of us have such conveniences. We have forgotten to mention that we smoked this Peach-house well with tobacco and bruised laurel leaves before we washed it; and if not brought in, some one or more, or some eggs, must have escaped all our care. We have observed no more as yet, but these few if let alone would soon be myriads. In fecundity the green fly is nothing to them.

ORNAMENTAL DEPARTMENT.

Here the chief work has been potting and taking dried soil into warmer places. We have also cleaned a pit of young plants of *Centaurea argus*, *Centaurea*, and put

pared it for cuttings, which cuttings, as Verbena, &c., and many of the best tender annuals for out-doors we will now hurry on. For Verbena cuttings, &c., we will chiefly use half-circular drain-tiles and old zinc spouting, or troughs, as vessels. In two-foot lengths the latter make admirable vessels for propagating. A few holes in them do no harm. Be the old spouts 2, or 3, or 4 inches or more across, it matters not, they are alike useful. All we do to them is to procure a pole the size of the spout, cut it into round pieces an inch wide, and then cut each in two with a billhook. These two pieces just fit into the two ends, with a couple of tacks at each end. It is best to leave a quarter of an inch or so open at the bottom, as that with a little rough stuff at the bottom of the trough is all that will be necessary for drainage.

For general treatment of plants in greenhouse and stove, we must refer to previous Numbers. In such fickle weather, care should be taken to give fresh air, and chiefly at the top of the house, and in watering not to spill any on the floor. Whatever is spilled will evaporate, and in a frosty night be condensed against the glass, and most likely if a hot sun succeeds it will melt and fall like a shower-bath over the house. A little air given early will help in this matter. In fact, in frosty weather a little given at the top of the house early will prevent the necessity of giving much anywhere during the day.

Mossy Lawns.—We would just add one word on mossy lawns. We thoroughly agree that if you pull up most of the moss, you should also top-dress and sow, as stated in a late Number. We once pretty well cleared a piece with rakes, &c., and then dressed with some ashes and lime, but that was not enough. We ought to have top-dressed richly and sown the fresh seeds. The exposure of the roots of the grass, by the tearing away of the moss, let the frost and the cold take such hold as to kill the grass, and next season the piece was like part of a fallow field. But unless where the moss is disagreeably long and luxuriant, why meddle with it at all? No more grass lawn, however solid and clean, can be half so agreeable as one formed partly of moss, if you do not sink much in it. In the one case you may have such a comfort as you can enjoy from walking on the floor of a room covered with stout oilcloth. In the other case you may enjoy such a luxury as is presented by the springing elasticity of a thick soft Turkey carpet. When a lawn, too, is covered chiefly with short moss that keeps green in moderate droughts, it is much more easily kept than one of fine grass. We have known some of such thick mossy lawns that a skiff with the scythe a few times in the season was sufficient to keep in first-rate order. Destroy the moss by all means, if it is so objectionable; but if it is short and firm, and you like a soft, elastic, easily-kept lawn, "let well alone."—R. F.

TO CORRESPONDENTS.

VERBENA VENOSA ROOT-CUTTINGS (H. J., Bristol).—The cuttings of the roots will, if you get them strong, bloom much more freely than plants obtained from seed.

PLASTER IN A SPARE ROOM (T. B. A.).—If we could look in upon you we would better ascertain what you chiefly required to do to your spare room, 18 feet long, 8 feet wide, and 8 feet high, to render it fitted for plants. You speak of your kitchen garden being made over the slates of your coal-house and pigsty. If your kitchen garden had been larger, or if you had ground to use as a flower garden, you might make it very attractive, and have vegetables earlier with the help of this spare room, whether you could easily heat it or not. If you designed to use it chiefly for flowers, or a few early Strawberries, &c.—in fact in whatever way, we would advise you to have your window of 10 feet long made not 5, but 6 or 7 feet in height, so as to have all the light possible, though 5 feet will do if you must abide by that height; but if so, we would place it so that the top of the glass was within a foot of the ceiling. Even then the first 4 feet would be the most valuable for growing plants of any kind, and the back part of the room would be best for storing many things in winter. When you tell us what you are most anxious to use such a room for, we will feel more than a pleasure in helping you if we can. We have no doubt the rabbits will do in the place proposed, but it will be advisable to let them have sods or earth to amuse themselves with.

WHITE TOKAY GRAPE (R. H. C.).—This is evidently the Vine you purchased under the name of the "Torquay." It requires heat, and its fruit is not highly flavoured.

FINE PICEA PINAPIO (A Subscriber).—We have been favoured with a photograph of one of the finest specimens of this conifer that we have ever known in this country. It is 4½ feet in circumference round the lowest branches, which touch the ground, and is 14 feet high, and perfectly symmetrical. It is growing in the grounds of F. Brown, Esq., Farley Hill, Luton.

LA COMPTANT STRAWBERRY (K. M.).—It can be obtained from any of the principal nurserymen in the vicinity of London.

MUSSETT'S HEATING APPARATUS.—Having noticed the complaint of your correspondent, at page 118, against "Mussett's Patent Hot-water Apparatus," I feel bound to state, in justice to the apparatus, that the one we have at this place has fulfilled every expectation. It was supplied by Mr. Mussett last October twelve months, and has been doing duty in a house 14 feet by 7. My neighbour was less fortunate with his at first, as it seemed determined to smoke and not make the water hot. We both condemned it as not fit for the task assigned to it. One day he lighted up and prepared for the usual results, but the apparatus worked admirably, and it was only then he found that the previous failure was all due to his own carelessness in not adjusting the lamps according to the printed directions.—H. Moss.

CHAMOIS SKIN WAISTCOATS (A Subscriber).—The so-called Chamotis skin is no other than the common untanned wash-leather so commonly used for cleaning plate, &c.

SEEDS FROM AUSTRALIA (J. R.).—Of the seeds sent all will be better of being sown in pots, well drained, and then set in a sowing-hotbed, and the plants hardened-off by degrees after they are fairly up. 1. *Leptospermum lanigerum*, a woolly-leaved plant, might do out of doors against a wall in the south of England after the plant was well established. 2. *Eurybia scutellata* is a white-flowered Aster or Daisy-like plant with prickly leaves. 3. *Rulingia farinosa*, a soft-leaved, small, evergreen plant, named after the botanist Ruling. 4. *Laslopetalum ferrugineum*, a rusty-looking woolly-leaved plant with white flowers, requiring a good deal of heat soil in the compost to grow it well, and also particular drainage. 5. *Callistanthus linearis*. The seeds had better be steeped in warm water for twelve hours before sowing, say 130°. It is a dwarf shrub, with narrow leaves and reddish flowers; seeds enclosed in a pod; peat and loam. 6. *Pomaderris lanigera*, a woolly-leaved plant with panicles of yellow flowers, requiring loam and peat. 7. *Eucalyptus cotinifolia*, corymbose, or something like that. The whole family is allied to the Myrtles, and have many of them fine foliage. In the south of England they will stand out of doors. 8. *Creatia*, cannot make it out. 9. *Humes elegans*. Sow in heat, prick off, and then pot off, and pot on during summer and autumn. Keep in a temperature not below 45° in winter, and the plants will produce their feathery heads next season—that is, in 1868. 10. *Creatia sertena* we presume to be *Acacia serotina*—if so, steep the seeds before sowing. 11. *Meibomia uncinata*, a rather strong-growing plant, and nearly hardy in the south of England against a wall. 12. *Pultenaea daphnoides*. Steep the seeds. Neat shrub with small yellowish pea flowers. To oblige you we have given this running commentary to your list, and would just add as a hint to others who now and then send such lists of seeds: First, that these seeds of yours have either not been collected by a botanist, or that you have spelt his names very indifferently, as some of them we have been obliged to guess at. Secondly, that though some are singular in their foliage, we question if there is one of the principal seedsmen about London who would not supply for a trifle those twelve packets of seeds, and in a condition more likely to succeed from your sowing than in the case of those sent home in the ordinary manner from Australia. Last season we were offered a part of several such collections to try them, but we frankly said that we could not find room or time for them. One who was very pressing we told how one that was a long time our co-adjutor used to receive such packages with thanks, because it pleased the donors, and then quickly put them in the fire-place.

STRIPPING GRAPE VINES (Perplexed).—The seeming contradiction arises from deficiency of explanation. The syringing was intended to be recommended to cease from the time that the buds burst until after the fruit was well set, and then to be given once a week until the berries began to colour. At other times watering the paths, &c., will keep the air sufficiently moist. We know that Gishurst compound may be kept dissolved ready for use, but we are informed by the best authority that it is best to dissolve it at the time it is needed.

SELECTING STRAWBERRY RUNNERS (J. G.).—Mr. Fish says he often takes them as they come, but a number of experiments convinced him that the first runners made by the Strawberry become the strongest and best plants, and the second and third runners the most fruitful.

EUCHARIS AMAZONICA (St. Nelson).—Without seeing the bulb we cannot give an opinion as to whether it will revive. Treat it as directed in our last Number, and it will soon give evidence either for or against itself.

BOOK (A Young Gardener).—To instruct you in drawing, such as a gardener finds advantageous, Loudon's "Self Instructor" will suit you. It was published by Messrs. Longman. Any bookkeeper can ascertain the price for you. (*Inquirer*).—Johnson's "Farmer's Encyclopedia," published by Messrs. Longman, will suit you.

SKIMMIA JAPONICA AND PHOTINIA SERULATA (F. M. J.).—The *Skimmia* is a low shrub, not suitable for a wall, but nevertheless fine for shady places. It would do well in a north aspect, but is a rather slow grower. *Photinia serrulata* will do for a wall, but should have an east or west aspect. It may do fairly on a northern one near Gloucester, but we should prefer *Ivy*. The flowers are white, and resembling those of the Hawthorn. They are interesting, but not particularly conspicuous; its chief attraction is its evergreen foliage.

COMPOST FOR FERNS (J. J. J.).—You could not have a better compost than that to be formed of your materials, loam, cocoa-nut fibre dust, charcoal dust, and silver sand. If yours be the cocoa-nut fibre, and not the dust, it is not good. The dust is like mahogany sawdust. The proportions of the above materials for Ferns may be half cocoa-nut fibre dust, a quarter loam (turf yellow loam is best), and the remaining quarter equal proportions of charcoal and silver sand. Such a compost will do well for *Begonias*; and there are few plants that would not do well in it.

REPOTTING CAMELLIAS (Idem).—Pot them in the beginning of April into pots a size larger, but do not give a large shift. Drain the pots to one-third their depth, and place over the drainage the rougher parts of the compost. Prepare a compost of peat two-thirds, turfy loam one-third, with a free admixture of silver sand. In the absence of peat cocoa dust (but be sure that it is dust, not fibre, for that is unsuitable) may be substituted for it. Turn the plants out of the pots, carefully remove the drainage, and pick away the old soil from between the roots with a pointed piece of wood, being careful not to injure the roots. Pot rather firmly, but not very hard, and with the collar of the plant slightly elevated in the centre of the pot. In potting be sure no vacant space is left between the ball and the sides of the pot. The soil should be worked down with a flat piece of wood, like a label in shape, and a gentle tapping of the pot on the potting-bench will help to fix the soil and fill up any cavities.

PRICING-DOWN ROSES.—POTTING FOR EARLY FORCING (G. B.).—They are layered in the soil, and root freely from the stem of the shoot without the slanting cut as in layering shrubs. We have layered them both ways, and we like them better without than with an incision, as the shoot is liable to break when cut. The incision also impedes the sap flowing into the shoot, and causes a multiplicity of shoots in the centre of the plant. If you want the shoots to root and form separate plants, an incision would facilitate their rooting. The best time to pot Roses for early blooming is early in September.

ALOCASIA METALLICA CULTURE (An Old Subscriber).—Turfy peat one-half and the other half turfy light loam and leaf mould in equal parts, with a free admixture of silver sand, will grow it well. Drain the pot well. It requires a night temperature of 60° in winter, and from 65° to 70° by day, and when growing, or from March to October, a temperature of from 65° to 70° by night, and 80° to 90° by day. It requires a moist atmosphere when growing, a plentiful supply of water at the root, but not so as to make the soil sodden, and in winter enough to keep the soil just moist, very little being needed at that season.

LIQUID MANURE, PREPARING AND APPLYING (K. D. T.).—Perhaps the safest of all liquid manures is that formed by dissolving 2 ozs. of Peruvian guano in a gallon of soft water twenty-four hours before applying it. This is the proper strength for watering plants which have been planted out. One ounce to a gallon of water is quite strong enough for watering plants in pots. The drainings from the stable are a very valuable manure, but require caution in using. They should be diluted with six times their volume of rain water, but if partly diluted through water running into the tank they will only need to be made weaker. If diluted, so as to be about the colour and thickness of fermented beer, the liquid will not be too strong for flowering plants in pots. All plants, with the exception of Heaths, Asclepias, and plants grown in peat, may be watered to advantage with liquid manure at every alternate watering; but to none should it be given until the plants are growing freely, and the pots filled with roots at least at their sides. It must be discontinued after the plants bloom.

VINEY-BORDER AND HEATING (A Young Gardener).—Your Vine-border of 3 feet in depth will give you room for a foot of rough rubble at the bottom. We approve of all that you propose. When you speak of walls of single brick with piers do you mean walls of 4½ or 9 inches thick? We would certainly prefer 9 inches. A small or medium-sized boiler will do. A conical one fed from the top will be easiest managed. For the vinery we would have three pipes in front, if to be forced early four pipes, and two pipes below propagating-bed. It would be well to make that into a span-roofed pit with small moveable sashes, or little glazed frames on each side. The heat then would be proportioned to the closeness maintained. These glasses may either be loose or hinged at the apex. We prefer the former, as they are so easily moved. For the span-house, as it seems likely you may use them for different purposes, we would have two four-inch pipes all round, except at the doorways.

LAYING-OUT A ROSEY (M. C.).—It is quite a matter of taste as to whether a rosey should be made with grass divisions or with gravel paths. The latter for a large rosey we would decidedly prefer, as you can walk on them in all weathers. We will criticise any plan, but decline giving one. Meanwhile we would direct your attention to No. 2 plan in the "Flower-garden Manual," which you may have from our office by post for 5d. To improve such a figure we would lessen the size of the central oval, and thus enlarge the size of the four figures round it; but much more artistic plans may be adopted. A very simple and elegant plan for such a piece of ground, 48 feet by 148, would be a circle or oval in the centre, and quarter moons round it in succession to each end, and then a row of posts 12 feet high all round, with chains between for climbing Roses.

VENTILATING SMALL GREENHOUSE (N. W. M.).—If the ends of your small hipped lean-to house are of glass we would have a ventilator at each end at the apex, just below where the front roof and the short hip meet—say a triangle with a base 2 feet long, and a perpendicular in the centre of that base of 12 or 13 inches. A piece of wood 2 inches wide going up there would do for hanging two ventilators to, which you could open as needed. If you do not adopt our plan we would make two ventilators, as you propose, beneath the coping of the back wall.

LOBELIA SPECIOSA SEED SOWING (James N.).—To succeed it is necessary to sow the seed in gentle heat early in March, and when the plants are large enough to handle prick them off 2 or 3 inches apart in pans, continuing in heat until the plants root freely, then harden off. We fear you will not command heat enough in your dwelling-house to have them sufficiently forward for planting out to flower well the same season. We find it requires pushing to do this.

ARRANGEMENT INSIDE A GREENHOUSE (T. C. H.).—In your lean-to house, 8 feet high at back, 5 feet high in front, and 8½ feet wide, we do not think you could do better than have your proposed wide stage or shelf of 18 inches along the front—say 27 inches from the ground, then a pathway of 2½ feet; then divide the space behind into three or four tiers of shelves—say the front one 2½ feet from the ground, and the upper one 2 feet from the glass. This would enable you to keep and grow a considerable number of dwarf plants not much above 2 feet in height. If you wished for taller plants you could have a walk down the middle of 2½ feet, and a flat platform or stage of 34½ inches on each side. This would secure more head room. The first plan would be best for numbers of small plants. The second would do for taller ones, and be more simple.

AMARYLLIS FOR A STOVE AND GREENHOUSE (J. S.).—The Habranthus group of Amaryllids are the best and easiest managed for the purpose. They require less trouble and heat in winter than the Eucharis amazonica (see page 163), but if they have a lift in spring they bloom better and earlier in winter.

SHADING A GREENHOUSE (Idem).—The best material is stout canvas, and it is a great protection in winter. Frigi domo as a lighter material answers well. Strong sils with the least whitening answers well for summer. Shades constantly in use soon wear out. We believe double glass would be better.

PEARS.—There is an omission in my Pear article which makes St. Michel Arrange one of the three Pears not yet fully proven. Barbe Nellis should come in after St. Michel Arrange. Barbe Nellis, Avocat Nellis, and Iris Regoïre are the three believed to be good.—W. F. RADCLIFFE.

NAMES OF FRUITS (E. F. D.).—1, London Pippin; 2, Winter Pearmain; Dutch Mignonne; 6, Winter Pearmain; 8, Colonel Vaughan's. Others

NAMES OF PLANTS (E. F. D., Kerry).—Your Mosses are—1, a Tortula; 2, Polytrichum nanum; 3, Bryum; 4, Tortula muralis; 5, Trichostomum polyphyllum; 6, Hypnum praelongum; 7, Bryum punctatum; 8, Hypnum proliferum.

POULTRY, BEE, and HOUSEHOLD CHRONICLE

THOUGHTS ON POULTRY SHOWS.

THE list of forthcoming events in "our Journal" has become "small by degrees and beautifully less," telling most of us that the season of rest has arrived, during which we must brace ourselves up for the fresh campaign. I hope that the exhibitors will probably do their best, committees will strive to do theirs. "Rest and be thankful" does not suit us poultry-fanciers. Sometimes it appears to me that the type of a prize schedule of a show is unaltered from year to year, kept ready, cut and dried for the next meeting, no addition, no improvement made. I have been disposed to think this, even in so good a show as the now defunct Crystal Palace Exhibition. Schedule-framers appear to fancy they have arrived at perfection. We are all interested in the success and stability of shows, and if I therefore string together a few thoughts, others may be able to add theirs.

We are tolerably agreed that they succeed best as adjuncts to agricultural meetings. We are not quite so agreed that the classes in minor shows should depend on the locality, myself being disposed to think that if there are classes, exhibitors will fill them. There is no question that "grand" shows should contain classes for varieties of all breeds in any way moderately kept, and in some varieties to a greater extent than at present. My previous analysis of entries has proved this with regard to Brahmas, and I may here state, *en passant*, that although at Bradford a class for Brahmas was added very late in the day, it filled very respectably, nearly equalling the Dorkings, although they had a silver cup temptation, and greatly surpassing Spanish and some of the other breeds. I may just say, by-the-by, as I see a reply to Mr. Leworthy, in one of the late Numbers of "our Journal" from "our Editors," stating they remain of the same opinion still as regards this breed, that the discussion carried on in these pages has not had a similar effect on others, and that I have received a letter from a gentleman who happened to know my *nom de plume*, in which he says that the discussion has completely convinced him of the distinct character of the Brahma, and it will be agreeable to Mr. Leworthy to know that his communication had a great deal to do with the decision.

In framing rules I would suggest that the time between the show and the last day for entries is often unnecessarily long. In the largest shows a fortnight would appear to be quite sufficient, and it is unfair to other exhibitors to accept entries after the date. This, I fear, is often done; at any rate, the same number occurring twice in a catalogue with * attached, and always to the same exhibitor's name, is suspicious. I believe that if the time of entry were of shorter duration more entries would be received, as it is difficult to say one month beforehand what it may be in our ability to do.

Further, I think that exhibitors would increase in number if committees showed them a little more courtesy. I am not saying too much when I write that the exhibitors are the most important part of the affair, and that without exhibitors we can have no shows. It is, therefore, a matter of importance to keep this class in good temper. There are several little matters which would help to do so, and which I now throw out as suggestions to committees.

Firstly, why not let it be a rule that with the labels a ticket of admission, not transferable, should be sent. Very often it would not be used, still it would give a kindly feeling towards the show in question to find you are not forgotten.

Secondly, I think that as soon as possible after the opening of the show a catalogue and prize list should be forwarded free to each exhibitor. Committees will say, "This is one of the items by which we hope to make money." Granted, yet it should not be out of the exhibitors, many of whom have had nothing but expenses. I have often thought that in printing catalogues, as we occasionally see them, a great deal of money and paper is wasted. Take the Brighton catalogue as an example. In other points esta-

logues sometimes have not sufficient printing. Take the "any other variety class," how often are the names of the birds omitted? This must be the fault of either the secretary or the exhibitor. If the former, he ought to be blamed; if the latter, he ought to be disqualified for incomplete entry.

Can any plan be devised for putting a stop to painting legs, &c.? Publicity does not seem to lessen it, as a name exposed by you some months ago is shortly afterwards found out at the same game again. Why not add a rule that all such pens should be forfeited to the committee? It would also be well and, I think, perfectly allowable for the secretary to intimate to the judge that certain pens would require a close inspection as a "painter" and "dyer" is the exhibitor.

"Selling classes" have become very fashionable. Have they answered the ends for which they were designed? I fancy not. I know that at one show first and second prize pens were claimed by their owners before the show was judged! in fact, entered for the prize, not for sale. I doubt if this can be remedied, a law preventing it could so easily be set aside by a friend claiming the pen; but it is worthy the consideration of exhibitors and committees. Possibly, as it is a class that pays very well for its extra prizes, committees will wink at this.

I do not think that managers of shows always carry out sufficiently their promise of paying every attention to the specimens. I have frequently before in your pages said that as regards food, they are too generous, but "every care" includes other matters, and the size of the exhibition pens is one of them. Baskets are bad, the open spaces let the cocks' tails protrude, and they are ruffled and broken. When baskets are used there should be some discrimination, so as not to give a smaller basket to Cochins than Bantams. Another point, often urged, and nearly as often forgotten, the placing all the entries in a class in the same light, is essential to please exhibitors.

Lastly, to bring my long yarn to a conclusion, I would make another suggestion that I think would greatly increase the entries. Gradually it has become an established rule to limit Game hens to one. Bradford has set the example in all the breeds. It was allowed that the specimens at this show were first-rate throughout. Had not this rule something to do with it? Many have a single very good hen. Again, the carriage is lessened, and now that some of the railway authorities seem to throw cold water on us instead of helping us, this is a great consideration. May Bradford in this respect find many followers! Then, perhaps, classes for "pairs of pullets" might be better than they now are.—Y.B.A.Z.

P.S.—I have just seen Mr. J. Wright's note as to Brahmas at Bradford. I gather that he had a catalogue, and threw it aside because it had no Brahma class. This, I think, was a mistake on his part; had he sat down and penned his reasons for not sending entries he might have received the amended schedule, and this is a kind of pressure on the committee by which the admirers of any comparatively unacknowledged variety of fowl may make themselves heard.

THE LAWS OF NATURE

IN RELATION TO POULTRY KEEPING FROM A COMMERCIAL POINT OF VIEW.

In my preface I stated that I should confine myself exclusively to giving publicity to such facts as I had proved by actual experience. My knowledge of the world cautioned me not to introduce anything which might savour of theory, particularly to a class of readers who undoubtedly by their education are conversant with the laws of nature, on which facts are based. I was, therefore, but little prepared to have so many questions to answer, which more or less compel me to do that which I endeavoured to avoid in fear of being considered pedantic. Though I feel flattered by the great interest my treatise has created, and though an explanation of the laws of nature will prove interesting to many, yet I trust that my correspondents will not consider it a want of deference on my part if I abridge as much as possible my explanations, but still with a due regard to giving a satisfactory reply to all inquirers.

EGG PRESERVING.

1. Question: Does it make any difference to preserve eggs a

few days old?—The egg comes from the hen at blood-heat, the liquid then fills every part of the shell, gradually the egg cools, and the air contained in the egg is condensed, thus leaving a vacuum. Now as the shell is porous, and the pressure of the outer air much greater, it forces itself gradually through the pores of the shell until the equilibrium is re-established, thus forming the depression of the fluid part observable in old eggs at the round end; and as the contact of the air with the fluid part very soon alters the taste, and renders them unfit for hatching from, it becomes essential that the eggs should be preserved as early as convenient after being laid.

2. Why should eggs be preserved better in rarified air than by merely packing them in air-tight jars?—The variations in the temperature of the atmosphere from below freezing point to summer heat are important considerations in preserving eggs. The elasticity and expansive properties of air need not be explained here, as they will require a full explanation under the questions in reference to regulating heat. I will, therefore, only say, that if an air-tight jar were closed up during cold weather without the air within being first rarified it would, provided it remained air-tight, stand a good chance of bursting during the summer heat, which would expand the air in the jar, and the pressure on the eggs would be so great that a quantity of air would be forced on the fluid through the pores of the shell. Were it possible to preserve the eggs immediately on being laid at the temperature of blood-heat, and during the hottest summer days, the jars would not require rarifying; but as such conditions are almost impossible to command, as the eggs must unavoidably on cooling absorb a certain amount of air, and as the atmosphere might become still warmer than on the day of filling the jars, it becomes necessary to rarify the air in the jars even in summer, although not to such a degree as during cold weather. The air in the jar being thus rarified its fermentation through the shell will not only be prevented, but the excess of air in the egg will actually be withdrawn until the equilibrium is re-established.—G. K. GEYELIN, C.E., London.

(To be continued.)

PRESERVING EGGS.

I CAN bear witness to the efficacy of the mode of preserving eggs, described by your correspondent "T. G." When they are carefully dried before being deposited in the crate, I have seen eggs preserved in this way perfectly sweet after the lapse of several years. Eggs, however, preserved in the ordinary way—that is, by rendering the shell impervious to the atmosphere, or by being placed in Mr. Geyelin's air-tight jar, are more useful in the kitchen, and those processes are more simple and expeditious than that of blowing each individual egg, which is necessary to the desiccation essential to the process described by "T. G."—K. S. M.

HIVE TEMPERATURE.

THOSE apiarians, of whom there are large numbers who, at the present day, make the study of the honey bee a scientific pursuit, are aware of the advantages accruing from an equable temperature of the hive, and of the evils which may result from a fluctuating or rapidly varying temperature—not that it is desirable to obtain a warm temperature through the winter months, which might cause too great a consumption of stores, but that a hive should not be affected by those great fluctuations which all freely conducting materials must induce. We must all, however, agree that a cool hive is a great desideratum through the hot summer months, during which the crowded inmates may work instead of clustering idly at the front of their close and oppressive domicile. This object can be but imperfectly attained whilst we make use of a material so free in its conducting properties as wood, as variations of the external temperature must necessarily affect the interior. Straw has been generally considered in some measure free from this objection, but, during my thermometric observations I have found a very slight and unimportant difference between the internal temperature of wood and straw hives.

It may be remembered by some readers of THE JOURNAL

OF HORTICULTURE that in the spring of 1864 I gave a short account of experiments I was then engaged in respecting an altogether new material—namely, the compressed tan which is used in some localities as fuel. This substance is prepared by allowing large quantities of the spent tan to undergo decomposition, being then capable of acquiring the necessary form by considerable pressure in moulds, and upon subsequent drying forms a most efficient, cheap, and durable hive, well adapted to withstand those sudden fluctuations of temperature which so frequently occur. Three of these hives—tenanted last summer, one by an artificial swarm, one by a late and small second swarm, and one by a late cast from a first swarm—have passed well through the winter months; and two of them, at least, appear likely to be early and prosperous stocks this summer.

I should wish, however, now, more particularly to call attention to the uncomb tan hive upon which the observations given below were made; the results, it will be seen, as compared with the box being greatly in favour of the former. It may be necessary to state that neither the tan hive nor the box was tenanted with bees during the observations. I give the mean readings of three daily observations of the thermometers placed respectively in the tan hive and a box, the latter being well protected with an outer case; the external temperature being indicated by a thermometer placed in the shade and attached to the exterior of the observatory hive. In a future paper I may give a somewhat detailed description of this hive, but my present object is simply to call attention to the somewhat remarkable results as shown in this register, a portion of which only I give; for, although made for several weeks continuously, the readings have varied but slightly throughout. I may also mention that upon submitting the hives to a very high artificial temperature the tan hive remained but slightly affected, whilst the box soon obtained and continued to indicate a temperature almost, and occasionally quite equal to that of the room in which the observations were made.

Thermometric Register, showing the fluctuations of an observatory tan hive, a box hive, and the external temperature:

Date.	Observa- January, 1865.	tory tan hive.	Box hive.	Exter- nal temp.	Date.	Observa- January, 1865.	tory tan hive.	Box hive.	Exter- nal temp.
10	...	53.5	...	40.0	...	49.0	...	30.0	...
11	...	53.0	...	43.5	...	49.0	...	29.5	...
12	...	53.5	...	44.0	...	47.5	...	30.0	...
13	...	52.5	...	33.0	...	47.0	...	25.0	...
14	...	52.0	...	43.0	...	47.5	...	28.5	...
15	...	52.5	...	39.5	...	47.0	...	35.5	...
16	...	51.5	...	36.0	...	47.0	...	36.0	...
17	...	51.0	...	34.5	...	47.0	...	35.5	...
18	...	50.0	...	32.0	...	46.5	...	27.5	...
19	...	49.5	...	32.5	...	...	...	...	...

—GEORGE FOX, Kingsbridge.

NEW BOOKS.

The Apiary; or Bees, Bee-hives, and Bee Culture. By ALFRED NEIGHBOUR. London: Kent & Co., and Geo. Neighbour and Sons.

MR. NEIGHBOUR says in his preface, "We are so frequently applied to for advice on matters connected with bees and bee-hives, that it seemed likely to prove a great advantage alike to our correspondents and ourselves, if we could point to a 'handy-book' of our own which should contain full and detailed replies sufficient to meet all ordinary inquiries." Keeping this object steadily in view the writer describes the various hives and apiarian apparatus manufactured by his firm, pointing out the various advantages claimed for them, and giving ample directions for their use. When we add that the author expresses his acknowledgments to Mr. Woodbury, Mr. Taylor, the illustrious Huber, and Mr. Langstroth, it may readily be imagined that the information derived from such sources must in the main be correct, and that Mr. Neighbour, in addition to the strictly business portion of his work, has been enabled to impart to his readers a very considerable amount of sound instruction on all points of apiarian management.

RANCID BUTTER.

One of your correspondents inquires respecting the rancidity in his butter. It appears by his statement that

the dairy is generally managed with perfect order and cleanliness. That may be the case, but perhaps there may be in or around the pasture, where the cows are in the day-time, ash, oak, or elm trees. I can speak with confidence that if such is the case "COCHIN" will find it a hard matter to obtain good butter.

Again, perhaps, he gives them turnips when they come home at night. Now turnips will not affect the butter of some cows as much as it will that of others, but I attribute the rancidity to the leaves, because "COCHIN" says that the butter is always rancid in autumn.

I would recommend "COCHIN" to place in the manger a lump of rock-salt.—T. L.

OUR LETTER BOX.

HEN EATING NEARLY-HATCHED CHICKENS (C. E. B.).—It is unquestionable that fowls are fond of flesh for their food, even when in perfect health, but there are peculiar conditions of body in which they have a craving for what we should consider most unnatural food. It must be considered as when a hen anxiously waits to eat the egg the moment she has laid it. In the first instance it was a desire for the shell only that made her eat. She found she did not possess the proper material, and could not find it; but when she had tasted the egg she liked it, and from that day she was an egg-eater. We have no doubt the cannibal hen you complain of, which broke the eggs and ate the chickens within, sought only the shell, but she saw the chicken and ate it; she liked it, and she ate another. She will eat all she can get; kill her at once. Watch your fowls if an unhappy frog makes its appearance on the grass of their run. Young pullets that have never eaten anything but grain and vegetables will start back at the first jump he takes. They then follow and watch him; then they peck him; all fly upon him; three or four peck at him at the same time. You will see the fortunate possessor chased by the whole brood all over the meadow, but they will never leave him, and at last he is eaten. The next they see has a much shorter shrift. The same if one of a walk gets an injury that bleeds, all the others begin to peck and eat. Every bird acquires the habit, and for that reason also we advise you to kill the hen. If you leave her at liberty she will cost you during the season her own value twice over.

COCHIN-CHINA COCK DYING (Noble).—We should think the Cochin cock that was almost a skeleton, though well fed, died of atrophy. It is certain that if there were any assurance office for the lives of fowls, cocks would have to pay double premiums as compared with hens. We believe that many Cochin-China cocks die in the act of crowing; we have been eye-witnesses of it. We have seen them prolong their crow till they had brought their heads down between their legs, and the end of their crow was the end of their lives. All Cochins are liable to apoplexy; they are large oysters, and take little exercise. Your feeding is good, the house is all that is desirable, and they do not suffer from cold. Your Pigeons are some of the German Tumblers.

GAME FOWLS, BLACK AND BROWN-BREASTED (Parrot and Chanticleer).—You may safely breed between the Black-breasted hens and Brown-breasted cock, and the probability is you will breed some good birds of both. The breeders of pure birds of both strains commonly intermix to obtain certain desiderata. Your description is that of pure Brown Red pullets, and although some of the cocks may follow the father, you will most likely find some of them Brown Reds. Your food is, if anything, too stimulating, and under ordinary circumstances you may discontinue the grooves. The pullets lay because they are pullets; they will not lay in the winter when they are hens. The latter will soon lay. Your last is a vexed question. If your hens were taken from the old cock at the end of December we think you may safely now set their eggs, believing you will breed from the fresh ones.

EGGS OF AYLESBURY DUCKS (A Constant Reader).—You must not conclude unfavourably from the colour of the eggs. They vary, even when laid by the same Duck, from white to pale bluish-green.

MR. DOUGLAS.—This member of the Poultry Club writes as follows:—"The pen 'A TIMID EXHIBITOR' alludes to a bought and sold at Manchester was claimed when above one hundred were in the show. It was claimed in my name, not by me; neither was it sold by me."

DIRECTION (T. Collison).—It is Mr. F. W. Zarberst, Balville, Donnybrook, Dublin.

MINGLED FOWLS (Helenburgh).—No possible cross in the Spanish can be the consequence of a Spanish cock being with Hamburg, Dorking, and Spanish hens. How long the taint may continue in the Hamburg and Dorking hens is a question yet undecided.

SALT FOR CHICKENS, &c.—Mr. Geyelin cannot give the required information about M. de Sora's chicken food. The other questions will be answered in the regular course, with many others on the same subject.

COW EATING CEDAR LEAVES (J. E. B.).—The cedar leaves would not injure her. The steep bank and its slippery surface, down which she had rolled, prevented her recovering her feet.

DOE RABBITS NEGLECTING THEIR YOUNG (J. N.).—Different causes have been assigned for this unnatural proceeding. We believe that it usually arises from a deficient secretion of milk in the doe, and this deficiency is often caused by the food being too fattening. We shall be obliged by information on this subject.

SHELL PARROTS OR BRIDGERS BUILDING (J. S.).—The cage should be placed in some retired situation, and not moved. At the end of the cage place a rough box about 5 inches square, containing the nest already shaped, composed of dry moss, grass, and wool, similar to what Gannets build with. Let there be some of the same materials loose in the cage. For further particulars see our Journal, New Series, No. 59, "Australian Parroquets."

BLENNIUM SPARKS SHEDDING ITS COAT.—"A. N." has a spangle of this breed continually shedding his coat, and wishes to know the cause and a remedy.

GROWING INDIAN CORN (A. Z.).—It cannot be grown in this country except in the southern counties, and in unusually long, warm summers.

WEEKLY CALENDAR.

Day of M th	Day of Week.	MARCH 7-13, 1885.	Average Temperature near London.			Rain in last 38 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
7	Tu	Violet flowers.	49.5	32.7	41.1	14	34 af 6	48 af 5	9 1	46 3	10	11 12	66
8	W	EMBER WEEK.	49.7	31.7	40.7	14	32 6	50 5	13 2	21 4	11	10 57	67
9	Th	Apricot and Peach flower.	49.9	31.3	40.4	10	30 6	52 5	15 3	49 4	12	10 41	68
10	F	PRINCE OF WALES MARRIED, 1863.	50.1	31.7	40.9	14	27 6	54 5	19 4	14 5	13	10 26	69
11	S	Gooseberry foliage.	49.4	32.0	40.7	15	25 6	55 5	22 5	37 5	14	10 10	70
12	Sun	2 SUNDAY IN LENT.	50.7	32.3	41.5	19	23 6	57 5	25 6	1 6	15	9 58	71
13	M	Daffodil flowers.	50.8	31.2	42.5	14	20 6	59 5	29 7	21 6	16	9 37	72

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 50.0°, and its night temperature 32.3°. The greatest heat was 67° on the 10th, 1826; 12th, 1841; and 15th, 1828; and the lowest cold, 7°, on the 10th, 1847. The greatest fall of rain was 0.69 inch.

THE MODERN PEACH-PRUNER.

No. 5.

ASPECTS AND SHELTERS.



THE proper aspect for the Peach tree in England should be as nearly due south as can be secured. South-east ranks next, and after this south-west. Much, however, depends on the locality of the garden and the position of the nearest shelter from high and cold currents of air. The prevailing winds must be carefully considered as to their effects on vegetation, and the Peach wall removed as much as possible from their full force. In France, M. Dubreuil recommended the south-east as the very best aspect. At Montreuil, where the sun's rays are scorching in summer, an east or west aspect is generally preferred. In mid-France they place the late varieties facing the south. The early kinds and the bulk of the trees are assigned to the east walls; but none are placed on west walls

if it can be avoided. At Montreuil so powerful is even the early sun that trees flourish which have no sun after 10 A.M. In such aspects, however, the trees make very long shoots, and give extra trouble to the pruner.

The proper height for a good Peach wall must be regulated in some measure by the situation. Where the ground is level and the aspect south the wall may be the highest. Very splendid fruit can be grown even on walls 6 feet high; indeed, many are greatly in favour of low walls as promoting free circulation of air in low and confined situations. The Montreuil walls are only 8 or 9 feet high; but then the form of training there admits of no riders, and favours considerable lateral extension of the branches. If low walls are adopted—that is, about the height of those at Montreuil—about 20 feet horizontally will be requisite for the trees to develop themselves laterally. If, on the contrary, the garden wall be 12 feet high, the trees may be planted at 15 feet intervals from stem to stem, with riders placed midway between them to cover the upper parts of the wall, which the dwarf-trained trees below could not ascend to. In favourable soil and climates the Peach tree, when doing well, will, however, greatly exceed these limits, but there is nothing gained by these immense trees. It must be borne in mind that the modern methods of training the Peach do not favour such extension; they rather favour the practice of having more trees in the same space, by which plan many advantages are gained, as will be seen presently.

Of the utility of copings there is little doubt. These should be fixed, and projecting not more than 3 or 4 inches, as more than this would shade the upper

branches by June, and intercept the dews and warm summer showers. Besides these permanent copings iron brackets should be fixed into the walls close under the copings. These brackets should project outwards about 12 inches. They should be of the shape of a triangle, one side secured against the wall, and on the upper side boards of inch-deal should be laid and screwed to the brackets. When the fruit has set, these boards should be removed and laid by till in many localities where the rainfall is great the heavy rains of September necessitate their being replaced. In southern districts this may not be required.

But the Peach requires other defences against the bad weather in the shape of stout tiffany screens or protectors reaching from the brackets to within 2 feet of the ground. Lower is not needed for the safety of the blossoms. These protectors should be used from February till the fruit has fairly set, and they should be left off gradually. Their object being to protect the young leaves, and especially to favour the setting of the fruit, they should be drawn up during the day, and let down only at night, or during storms of wind and rain, or fogs. Great care is needed not to stifle the growth of the tree. On the utility and daily management of tiffany protectors I quote from a letter from the Rev. W. F. Radclyffe. To show how situation affects temperature he says, "Being in a valley close to the water the frosts are severe. After black frosts cease, for eight or ten weeks hoar frosts succeed. It would be hopeless to grow Peaches without efficient protection. Fir boughs and netting would here be moonshine. I find the leaves even more tender than the blossoms. In severe winters like this I keep on the protectors, unless the weather is mild, by night and sometimes by day. Snow or sleet should never get into the trees. The protectors are put on as soon as the fruit-buds swell. They are let down at 4 P.M. and raised in fine weather at 10 A.M. If the weather is bad they remain on even for several days. They must be left off gradually, as cold draughts are injurious."

It remains only to mention that I have seen instances where much injury was done to the trees by these protectors being placed too near to them, the wind by impinging directly on the surface of the protectors causing them to beat sharply against the leaves and blossoms.

It seems useless to expect a crop of Peaches, even in favoured localities, without some such protection as the above. Nor is the expense great, these protectors serving for several seasons, and the trouble is amply repaid. During the hard frosts of winter the Peach tree may suffer; but the danger is not in reality great in ordinary seasons provided the wood of the tree is ripe. The difference this makes in the welfare of the tree is very great, nor is it surprising when we remember that the Peach is a native of Persia. Though the winter frosts of that country are exceedingly severe, yet the Peach tree survives them simply because the fierce sun of the preceding summer has most thoroughly ripened the young wood; it is rather the excess of autumn rainfall in England, after a cloudy summer, which endangers the vitality of

the tree. If to this be added injudicious pruning and cold undrained borders, what possible chance of success can be expected?

Let us, then, be very careful to secure such an aspect as shall best ripen the wood; then shelter from cold currents of wind mingled with rain must be obtained. Generally speaking such shelter should be perpendicular, facing the wall. Air is elastic and readily turned aside. Openings, however small, must increase the violence of the blast. Plunging winds without outlet, as in the case of small gardens enclosed by high walls, are extremely unfavourable. Imagine such a rush of air for hours together, and directed against unsheltered trees, and this during a period of low temperature, and then you will feel no surprise at their being unproductive and diseased.

Every advantage, then, must be taken of neighbouring shelter in laying out a garden. On the western coasts the general exposure of the whole garden should be sheltered from the south-west quarter. In the Channel Islands, exposed as they are to the force of the Atlantic gales, this is carefully studied. Each year brings disasters to our gardens, and we do not so much dread winds from an eastern quarter as from a western. In the eastern counties of England, however, all testimony goes to prove how fearfully destructive to the tender leaves and shoots of the Peach are the cold evaporating effects of a continuous east wind. Above all, let the amateur direct his attention to securing this shelter without losing unnecessarily one precious ray of sunshine in our cloudy regions: therefore the protection must be somewhat distant from the trees and yet not too far. On very long walls temporary screens placed across the borders so as to deflect the scud of the wind are advantageous, but buttresses to the walls throw a dangerous shade, and are not to be recommended.

The material of which the wall is constructed is not very important. Brick seems on the whole the best material, and wire trellises are, no doubt, by far the best to use for training purposes and for obtaining beautiful forms; still the old shreds of cloth have many advantages, as have also studs fixed in the wall for training to them with soft wire. The great object is to secure the radiated heat of the wall. It is astonishing what a difference an inch makes in this way. Some have even recommended obtaining a succession of crops by varying the space between the branches and the wall, but modern practice relies more on the numerous varieties of fruit now known.

The "Modern Peach-pruner" has no faith in the practical utility of heated walls. What are glazed coverings for Peach walls but narrow and stifling contrivances to effect what wide and commodious orchard-houses do so much better? When once we desert the time-honoured open wall, now so elaborately furnished with Peach appliances, why should we adopt half-measures and middle courses? not to speak of the great advantage of combining the two methods so as to secure the best of each. I mean that in a combination of a good Peach wall, with a properly-managed orchard-house, the amateur will find everything he can reasonably desire. This, at least, is within the reach of many, whilst the more expensive heated Peach-house can still be added by such as wish an earlier produce.—T. C. BRÉHAUT, *Richmond House, Guernsey.*

SOIL SUITABLE FOR THE RHODODENDRON.

SOME years ago the Royal Agricultural Society offered a prize for the best essay on the causes of fertility in soils, but the different writers were far from unanimous in the conclusions to which they came. One fact, however, was alluded to, or rather an old idea was confirmed, that certain classes of plants require food of a widely different character from others—hence the different plants found wild in different localities—and that if the soil is of an extreme character the presence or absence of these plants affords a tolerably good indication of what cultivated plants will thrive on the spot. On the other hand, there are intermediate soils which are much more difficult to understand than those of an extreme character, and now and then failures take place with them of a kind neither looked for nor easily explained; but 'till chemistry assists us with some easy mode of testing

the dark; and as one of the errors alluded to occurred here with plants under my own management, I deem it quite as much a matter of propriety to make it known as if unexpected success had followed the operation. The case was this.

About three years ago it was determined to take into the dressed grounds a piece of pasture land that was well sheltered on all windy sides by high and thriving trees. The soil was what would be considered by a farmer all that he could wish for, being deep, mellow, and sufficiently dry to require no artificial draining, yet not so hot as to suffer too much from long-continued drought in summer. The soil at 2½ feet down looked almost as good as at the top, and the stony subsoil below that was so favourable to the roots of trees, that I expect some have made their way for 10 or 12 feet downwards; for in sinking a well some distance from the place, but in soil of a similar description, roots of trees were found 22 feet below the surface. This I merely mention to prove the healthy character of the subsoil, or, at least, to show that it favoured the growth of certain trees, while the surface produced us the heaviest crops of hay we had anywhere. I may also add, that most forest trees thrive well, Elms particularly so; while not very many yards off were some old Apple trees with boles approaching the size of moderately large timber trees, and although these patriarchs had ceased to be depended on for producing a crop, now and then they did furnish us with a few bushels of kinds that seemed to have passed out of cultivation, but which are, nevertheless, not without merit. I might also add, that most shrubs and Conifers seemed to do well in this soil, Pinus Douglasii excepted, and that probably from some cause that might be accounted for in another way. It was thought advisable to try Rhododendrons on this newly-enclosed plot, and as these have not prospered as well as could be wished, some description of the mode adopted may, perhaps, prevent others falling into a like error. At all events it will show, that a soil so good in many respects was, nevertheless, deficient in some of the qualities required by the Rhododendron; while the common Laurel, Laurastinus, and several species of Cupressus, Pinus, and Wellingtonia flourished, the Rhododendrons dragged on a wretched existence, some, though not many, dying, and the most of them merely growing 2 or 3 inches, and having naked stems.

Now, though I attribute the non-success of the Rhododendrons in a great measure to the natural soil of the place, I am not certain that it is entirely due to that cause, and have sometimes had doubts whether the mode I took to promote their well-doing might not have had a contrary tendency. I may state, that we have no good black heath mould in this neighbourhood, and have to bring it ten or a dozen miles, consequently, it cannot be had for out-door purposes so freely as desirable. A cartload or two of boggy peat was sent me from a shorter distance, this I soon found out would not do for potted plants, but anxious to turn it to account, I mixed it with other ingredients—as leaf mould, sand, and the refuse of a timber-yard, making the whole into a large heap. The beds for Rhododendrons having been prepared by trenching, about half a barrowload of this mixture was used around the ball of each plant. The weather at the time was favourable to planting, and although the spring was somewhat dry, I expected better results than what followed, or, at least, that the plants would have done better the following year, but such has not been the case. I have, therefore, come to the conclusion, that there is something radically wrong, and although I may possibly be wrong in my surmise as to the cause of the non-success of the Rhododendron, I will, nevertheless, state what I conceive it to be, and will afterwards record an instance of failure in the cultivation of this plant in a widely different case.

I have said that a portion of the mixture applied immediately around the ball of the newly-planted shrubs was a black boggy peat, which evidently contained mineral substances pernicious to the Rhododendron, at least it was so to Heaths and Azaleas, and excepting the coarse marsh plants which it supported in its natural bog, I should think it was ill-adapted for anything else; but I expected that by mixing the peat with five or six times its bulk of other substances, its injurious qualities might have been modified or, perhaps, neutralised. I have also stated that some refuse

from a timber-yard, consisting of rotten bark and chips, with, probably, some very old sawdust, formed a portion of the mixture. This material, at the time, I took to be inert rather than injurious; and from the fact of weeds growing luxuriantly in it, I felt assured that it could do no harm, and with the large quantity of leaf mould, sand, and boggy peat used would, probably, prove beneficial. Perhaps, however, the presence of bark from resinous woods—as Scotch Fir and Larch, might have a deleterious effect, and, I believe, such bark is generally objected to; but as Scotch Fir in particular seems to grow wild on dry peaty soils favourable to the Rhododendron, the inference I drew was, that the bark ought not to be hurtful. Certain, however, it was, that the better class of Rhododendrons made no progress in it, or grew very slowly, while the common kinds, as *R. ponticum*, did very well; also, other shrubs which received a share of it in another place. Although the mixture was unsuitable to the hybrids of this interesting family, it evidently contained nothing injurious to anything else.

In contrast with the above case, but also affording another instance of unsuccessful treatment of this somewhat capricious tribe of plants, a friend of mine, some short distance from here, having a small piece of marshy boggy peat which supported some very good Silver Firs on its elevated parts, and had its lower portions studded with Alder and Willow, had the latter removed and the whole well drained. After being trenched, part was planted with Rhododendrons in the full expectation that they would do well; whereas, they have absolutely done worse than mine. The kinds in this instance were also hybrids worked in the usual way, and good healthy plants when they were planted. I believe the numbers that have actually died have been more than with me, and the remainder show little signs of accommodating themselves to their present home. Now, this case differs widely from mine, and at the same time is equally unfortunate, or more so; as with me the common varieties thrive tolerably, while with him all are bad. I ought, however, to remark, that the boggy peat was so charged with feruginous matter, that the water drained from it encrusted its bed a bright red colour; but I have seen this before at a place where Rhododendrons succeeded admirably, but the issue shows that our acquaintance with such matters is far from perfect yet.

Now, as some soils contain within themselves all that can be desired to make the Rhododendron flourish, it behoves us to look round for some simple test as to what that requirement consists of. In my own case, I confess being unable to give the chemical constituents, but a study of the classes of plants found growing wild there would greatly assist in doing this. Certainly this is better than any other mode I am acquainted with, and less likely to lead to disappointment than being guided by appearances only; for soils as much unlike each other as possible are found to be equally favourable to the growth of Rhododendrons. In very many places these sow and reproduce themselves by thousands, and the more rough and overrun with weeds and rubbish the better the young seedlings seem to thrive. The dry black peat of upland moors is not by any means the only soil they like, as I have seen them do well in apparently a yellow sand, while a sort of yellow sandy loam is very often more favourable to them than the black peat, and nothing can exceed the luxuriance of some of the common kinds which we have growing on ground which is at least two-thirds stones. Sometimes they grow not amiss in a damp clay, although cases of this kind are more rare than the others; but to the amateur who may not have had experience in such matters, I would say, that in those districts where the Foxglove predominates among other wild plants, there he may plant the Rhododendron. The wild Heath, no doubt, is an equally good guide, but it is more sparingly distributed. I do not mean to imply that a solitary plant or two of Foxglove will be sufficient to insure success to the Rhododendron, as accident may have placed them there, but where successive crops of this beautiful native plant exist, struggling with and overcoming the other herbage of the place, there the Rhododendron may be planted with a fair prospect of success. The wild Fern is a less certain guide, unless it predominates almost exclusively, for it is often found on soils not suited to the Rhododendron. It is, however, a frequent occupant of the same plot. Other and less conspicuous plants

also abound in such places, while some of our wild Orchises grow in soils exactly the reverse of that required by this plant, and to which it would be folly to remove it. When chalk and lime predominate, it is hopeless to expect success with the better class of hybrids, and the common ones will only be able to live; to luxuriate is out of the question. The subject is well worthy of attention, and more information may be given by those residing in neighbourhoods where the Rhododendron flourishes better than any other evergreen, which it certainly does in some of the midland and western counties.—J. ROBSON.

CONSTRUCTION OF PITS.

I PURPOSE making two frames, one cold, to use for wintering plants, the other for propagating. They will be 6 feet from back to front. Oblige by saying how much higher the back of each should be than the front. The propagating one, I understand, must have the most slope. I purpose making the latter—say 3 feet below the ground-level, and to have a trench 2 or 3 feet wide round it, to line with spent bark. The wall below the ground-level I purpose having half-brick-thick, above it one brick. I conclude the heat would pass more freely through the openings in the thinner than the thicker wall; and if I should be under the necessity of using it also as a cold frame, the nine-inch work above ground will keep out more frost. By keeping the linings in, of course the frost could not pass that way.—TYRO.

[What are generally termed frames are boxes made of stout wood, with glass sashes to suit. These are generally made with one, two, or three lights. Your proposed erections are pits, being built of brick, and therefore stationary, whilst frames are easily moved from place to place. If your cold pit and propagating pit are to be in the same range, there is no necessity for their being of different levels, or having their glass in different slopes. For pits 6 feet wide, you will have a nice slope if the back wall is from 20 to 26 inches higher than the front one. You propose making your cold pit of nine-inch brickwork, and that will do very well. If you have a good bricklayer, who would tie a nine-inch hollow wall properly, it would be warmer in winter, and cooler in summer, than a solid one. If you mean to set your plants on the floor of the pit, say rough ashes, &c., then it would be as well if the floor were a few inches above the outside ground-level, some small openings being left in the wall, to allow moisture to escape. If you make it deeper, that will be no loss, if you elevate boards on which to set somewhat dwarf plants, as, the greater the amount of air enclosed, the longer will that air be in heating or cooling.

Now, as to the propagating pit. You purpose sinking it 3 feet beneath the ground-level, and surrounding it with a trench 3 feet deep and 2½ wide, which we think all right; the bed inside to be built of tanner's bark, and the lining also to be filled with the same. Now, we must here observe that, in using tanner's bark for a bed, when the heat declines, the adding a barrowload or two of hot tan to a light inside, mixed with the old, will do more to increase the heat than three times the quantity from the lining. As to the lining itself, to secure its efficiency and neatness, it should be covered with wooden flaps on the ground-level, the flaps sloping, say 1½ inch, from the wall to the ground, so that you can walk by the side of the warm pit as comfortably as by the side of the cold one; and then, if the lining sinks, the heat will still be directed against the wall or bed beneath the ground-level, being sent back by the boards instead of going into the atmosphere.

With your proposed plan of having a single brick-on-bed, we presume below the ground-level, so as to obtain heat from the lining, and a nine-inch wall above, we have no fault to find, though you do not describe how you mean to join the nine to the 4½-inch work. It is rather contrary to the common mode of building, in which the lowest stories ought to have the thickest walls. We think it would be an improvement to have nine-inch piers every 4 feet, and a flattish arch between every two piers, the crown of the arch being at least 6 inches below the ground-level. If you were quite sure that the bed inside, whether of dung or tan, or both, would always be 1 foot above the top of the arch, then you

would need no wall beneath, and the linings would at once act on the bed. There would be little danger from tan, but there would be from rank dung in the lining, if the bed inside were not fully 1 foot above the top of the opening. If this deep pit, when cleared out, should be used for keeping tall plants in during the winter, it would be better to fill in the openings of the arches with brick-on-bed, and better still if well done with brick-on-edge, and cement joints. Brick-on-bed would be more secure if tried with a thump from the fork. In finishing such a wall a bent pipe should be inserted beneath each arch, to admit moist heated air into the atmosphere of the pit when deemed desirable. We need not say how dry heat could also be obtained for the atmosphere of the pit, by allowing this wall to project into the pit a couple of inches, and on this projection fixing slates or sheet iron, $1\frac{1}{2}$ inch from the nine-inch wall, but making all steam-tight. A very simple plan for securing top heat from the linings would be to have two or three holes, say 2 or more inches square, in each arch, and then build the nine-inch wall above it hollow. The heat that rose from the lining would thus rise through the wall, as well as heat the bed against which the lining was placed. With plenty of heating material anything might be done in such a pit, and more especially if from November to May a little straw were neatly tied against the outside walls above ground. This is much better than using litter, and it does not require so severe a frost, if continuous, to go through a solid nine-inch wall. Many have carefully protected the glass and let the enemy in by the wall.]

HEATING AND GLAZING A SMALL CONSERVATORY.

WHAT is the best way of heating a conservatory about 18 feet by 12, where economy of construction and working is a consideration? I want, if possible, to avoid the necessity of having a fireplace, chimney, &c., on account of appearance. Are any of the systems which do not require this, thoroughly effective? Mussett's Patent, for instance, which is a moveable coil of pipes, heated by two lamps? I have heard that there is something in this and similar systems, which have the fire inside the building, injurious to plants, if not unpleasant to the smell?

Is ribbed or fluted glass suitable for the roof of a conservatory, or does it obscure the sunlight too much?—N. P.

[Relative to heating, we can add very little to what has been advanced in previous Numbers. We strongly object to heating by oil lamps, or gas, whether as a stove or with hot water, and to stoves with prepared fuel, unless there is a pipe or other arrangement for taking the products of combustion out of the house. Many small conservatories close to the mansion are heated from a kitchen boiler on a lower flat, but then you will be a little dependant on the cook. The most economical of all for such a small place, would be a brick stove with a pipe through the wall. The least cumbersome would be a small iron stove with a pipe through the glass roof, as the whole could be taken out from the middle of March to the end of October. The brick stove might be fed from the outside, the iron one from the inside. A little care in damping when cleaning out, and using a little dry wood for lighting, a few nodules of coal then, and coke and cinders afterwards, would involve but little trouble, and cost much less than oil or gas. We have no doubt that Mussett's Patent and other stoves and boilers do well with common care and attention, heated either by candle, oil, or gas, the last two the best. If, as said above, there is a pipe to take off the smoke, however little, that pipe will also give out heat; but, as stated the other week, the minutiae must be attended to. We prefer ribbed, fluted, or rough glass, if good, for the roof of a conservatory. Plenty of light will pass through it, and you will need no shading. The front lights of clear glass, however, look best.]

HOW TO KEEP PEARS.—Permit me to correct one or two slight misprints, owing doubtless to my crabbed handwriting. In the second paragraph "other pots" should be "these pots." At the end of the third paragraph "these very late Pears" should be "the very late Pears."—T. R.

GROWING MUSHROOMS AND BLANCHED VEGETABLES IN A CELLAR.

COULD Rhubarb, Sea-kale, and Mushrooms be grown in any of the cellars hereafter described without fear of engendering damp and unwholesome smells?

1. An underground cellar, paved with brick, about 7 feet by 7 feet, 6 feet high, with a small window to the open air near the top, and situated under a dwelling-house.

2. A cellar level with the ground floor, 6 feet by 6 feet, 8 feet high, gravel bottom, no communication with the outer air, a living-room over it.

3. A cellar level with the ground floor, not communicating with the house, gravel floor, door to the open air, no window, a living-room over it, 12 feet by 10, and 8 feet high.

If Mushrooms could be grown in any of the above without fear, what would be the best time to commence a bed?—BANKS OF THE THAMES.

[For the first there would be no danger whatever. If the room is ceiled, all damp affecting it would be neutralised by brushing the ceiling over with boiled oil; but with a window we do not think there would be any damp to injure anything. The advantage of an underground cellar is its equable temperature. This would answer well for Mushrooms in summer, if the window were blinded to keep out the heat. A bed may be made at any time.

2. This can hardly be called a cellar, and it would be of no more use than any other close room or shed. It would not do for Mushrooms in summer unless kept cool, and Rhubarb, Sea-kale, and Mushrooms in winter could only be grown by artificial heat. If there is a door to take the materials in without going through the house it would do very well. With no ventilation the ceiling should be secured with oilcloth, or oil brushed over it.

3. The advantage of this is having the door to the open air. This would do for Mushroom-beds all winter by covering the beds when made, according to the weather. Rhubarb and Sea-kale would be produced all the winter by placing the roots in a mild hotbed. The ceiling should be protected, or a ventilator placed above or on the top of the doorway. Such a place, kept at about 55° or 60° will give good cuttings all the winter. There is no necessity for the place as a whole being kept to that temperature, but the roots may be covered so as to secure that temperature about them, taking off the covering when not wanted.]

WINTER-FLOWERING PLANTS.

THE following are a few more of the useful winter-flowering plants not in Mr. Jones's list, and I hope they will aid in giving a still more lively appearance to his already enlivening collection. The chief of these have been in flower since November, or will do so before April.

In the stove:—*Franciscea eximia*, *confertiflora*; *Echynanthuses*; *Echmea fulgens*; *Torenia pulcherrima* and *asiatica*; the beautiful *Gesnera cinnabarina*, *splendens*, and *zebrina splendens*; *Jasminum gracile*; *Eugenia cordata*; *Begonia Digwelliana*, one of the freest of winter-flowering plants. We have at the present time plants in 24-sized pots, 14 inches high by 18 inches in diameter, covered with bloom; besides standard plants in 32-pots, 14 inches high in the stem, and having compact heads, 7 or 8 inches in diameter loaded with pendant rosy purplish flowers. Besides these there are the elegant little *Sonerilas*, with their feathery-looking rosy pink blossoms. *Gardenias Fortunei*, *Florida*, and *citriodora* are more or less commencing to flower. In stove bulbs there are the bright-coloured *Amaryllis sulcata*, *fulgens*, *Johnsoni* *præcox*, *crocata*, &c., *Imatophyllum minimum*, *Eucharis amazonica*, *Pancratium*, and others.

In the greenhouse are:—*Daphne odorata alba*, the sweeter one of the two; forced Oranges in flower; *Hovea Celai*; *Habrothamnus elegans*, in flower all the winter; *Asclepias longiflora magnifica*; *Coronilla glauca*; varieties of *Cytisus*, with forced Lilacs, *Weigelas*, *Deutzias*, Sweet Briar, *Mignonette*, *Nemophila*, &c. In greenhouse bulbs the most prominent and useful are the *Cyclamens* in their several kinds; *Coum*, *persicum rubrum*, *persicum album*, *Atkinsi*, and others are the most showy; though I regret to say that in consequence of the great demand for them the

trade have been driven to procure home-grown seedlings, very many of which are very far inferior to the original ones. In addition to the above there are *Lachenalias quadricolor*, *pustulata*, and others; *Oxalis fulgida*, and *sanguinea*; *Tristelia uniflora* (forced); the prim little *Oxalis tricolor*; *Phedranassa chloracra*; *Ixia scillaris* (variegated); *Hymenocallis Skinneriana*; *Scilla brevifolia*, *bifolia*, &c.—W. E.

MR. ABBEY'S PLAN OF PLACING STRAWBERRY SHELVES.

At a moment when Strawberry forcing is in progress, and very many gardeners and amateurs are obliged to resort to various contrivances to secure additional space and suitable positions in their forcing-houses for the Strawberry plants they wish to force, the plan described and illustrated in the article on "Strawberry Forcing" in a recent Number of your Journal by Mr. G. Abbey may seem to some of those who are inconvenienced by having more plants to force than space to give them, a very opportune and useful suggestion, and as far as regards the extension of space for Strawberry pots in a house it may be so; but in respect to the suitability of the plan for successful Strawberry forcing I venture to express a doubt. In Strawberry forcing it is undoubtedly an advantage to place the plants on shelves near the glass, and Mr. Abbey's plan secures to the plants one of the conditions it is desirable they should enjoy; but with that proximity to the glass there should be a provision for the admission of air, not in strong sweeping currents when the sun shines, but slowly and steadily; in short, there should be an equal yet restricted play of air about the plants night and day. It is very necessary to prevent undue heat and dryness operating upon the plants, as excess in these particulars tends to interfere with the setting and swelling of the fruit. Placed as the shelves are seen in Mr. Abbey's design, it would be difficult in ordinary houses to preserve the plants from the scorching effects of the sun in the bright drying weather of March, and the exposure of the Strawberry-pots to the sun's rays and the currents of air necessary to keep down the temperature of the house, would dry up the soil and injure the roots, which should always be kept cool and moist. Having tried, some years ago, the plan now suggested by Mr. Abbey of hanging Strawberry shelves, and found the objections to it which I have stated, I am induced to speak with greater confidence; and I was led to devise the little Strawberry forcing-houses which bear my name, in consequence of the difficulty I found in securing suitable places for Strawberries in ordinary forcing-houses. I was led to the idea of my plan by finding that Strawberries always succeeded on shelves placed in the front of lean-to houses close to where the roof-lights rested on the front-supporting plate, and where a little air constantly entered; at the same time the pot was shaded from the sun by the thickness of the plate.

In other respects I am glad to bear testimony to the propriety of the recommendations in regard to Strawberry forcing in Mr. Abbey's very able article.—WILLIAM INGRAM, *Beccot*.

THE EXHIBITORS' LETTER TO THE COUNCIL OF THE ROYAL HORTICULTURAL SOCIETY.

YOUR correspondent "F.R.H.S.," page 126, writing in defence of the Royal Horticultural Society's programme for the present year, alludes to the sameness of the exhibitions from the repeated success of the same subjects; and, like the majority of those who write on the matter, he falls into the mistake of treating these exhibitions as mere spectacles for the horticultural sightseer. Now, I say without the least hesitation, if that were the chief and highest object in view, the exhibitions would be comparatively useless. To persons who are in the habit of seeing all the London or leading provincial shows, I admit there is not that novelty which many people are always craving for; but there is another very important matter which novelty-hunters lose sight of—namely, that at any one of those exhibitions there are hundreds of ladies and gentlemen, and also gardeners, who for the first time see a first-class horticultural show, and whose tastes for horticulture receive a stimulus on the

one hand, and on the other an incentive to and opportunity for observation, such as nothing else has the power of affording.

By all means encourage fresh subjects as far as practicable without lowering the character of the exhibitions; but it is well known to persons experienced in plant growing that comparatively few of the plants introduced to this country can be made subservient to the skill of the gardener so as to become fit for exhibition purposes. Although the same varieties, and in some cases the same plants, are generally successful, still I maintain it is better even so than to supplant them by subjects that are less calculated to exemplify what it is possible to accomplish by first-class culture.

"F.R.H.S." asks, What have those "magnificent specimens" to do with horticulture? More, I maintain, than any person can calculate, by the example they place before those connected with horticulture in all its bearings. Critics to be consistent ought to turn round upon the fruit-growers, something in this fashion—"We are tired of seeing your magnificent Pines, splendid Grapes, Peaches, Nectarines, &c., and request you to ransack the globe to find fresh fruits to operate upon; if they are fine-looking and palatable so much the better, but something fresh we must have."

If the London societies wish for fresh exhibitors, with probably a few different varieties of plants, then they ought to make a few classes for distant exhibitors—say those who reside 150 or 200 miles away. Not that provincial growers are afraid to compete with those near the metropolis, but simply for this reason—plants which have travelled so far cannot possibly look so fresh as those grown near to the place of exhibition, not so much in consequence of the distance as the time that stove plants must necessarily be out of their proper temperature before they can be placed on the exhibition stage.—T. BAINES, *The Gardens, Summerfield, Bowdon, Cheshire*.

DEVONIENSIS ROSE.

I QUITE agree with Mr. S. J. Pavitt, of Bath, in thinking there is but one variety of this Rose, and I have much pleasure in giving my testimony as to the extraordinary vigour and hardness of the plants sent out by him. There are at present growing in the garden of Henry Abbot, Esq., of the Priory, Abbots Leigh, near this place, three *Devoniensis* plants budded on the Briar, which I purchased for him of Mr. Pavitt in the year 1862, and which for size and vigour surpass any Rose plants I have ever seen. They are all three planted side by side against a south wall, one of them covering a space of upwards of 40 feet wide, and having shoots of the last year's growth from 10 to 16 feet long, and measuring in circumference at the base the extraordinary size of 2½ inches.

All three plants were last summer covered with blooms far surpassing in size and beauty any Tea Rose I had ever before seen, and I may, perhaps, add that my experience as a Rose amateur and visitor of Rose exhibitions has been by no means limited. On the occasion of my visiting Mr. Pavitt's nursery to purchase these plants, he took me to see some *Devoniensis* Roses sold by him, and growing in the garden of a gentleman residing near; they were grown as pillar Roses, and for rampant growth and vigour could scarcely be equalled by Charles Lawson, which for a pillar Rose would, I suppose, be considered one of the best summer Roses ever sent out.—R. C., *Clifton*.

THE UNITED HORTICULTURAL SOCIETY.—A meeting has been held for the purpose of establishing a society under this title. Various rules were adopted but we have only space to spare for their preface:—"The objects of the Society shall be to promote the practice, study, and advancement of horticulture in all its various branches; means shall be especially taken for the examination of plants, flowers, and edible fruits, their nomenclature and synonyms, establishing their relative merits, investigating their physiology and diseases, their uses, properties, cultivation, and improvement; also to facilitate the formation of a fund for the benefit of gardeners during sickness, calamity, and old age; such fund to be managed by a separate committee, acting under a separate code of rules." When we have had an

opportunity of judging of the Society's proceedings we shall be better able to appreciate its merits, and we shall be well pleased to announce that it has effected anything for the advancement of "Gardening and Gardeners."

ROYAL HORTICULTURAL SOCIETY.

THE weekly Show of the 4th inst. was not only gayer but better attended than any of those preceding it. Messrs. E. G. Henderson sent thirty pots of *Cyclamens*, consisting of *coum*, *Atkinsi*, and *vernum*; Mr. Ingram, Frogmore, *Ansellia africana*, seedling *Cinerarias*, and a stand of *Camellia* blooms; Messrs. Lee, Hammersmith, *Camellia* blooms, *Epacris*, *Hyacinths*, *Heaths*, and early *Tulips*; also a well-bloomed and handsome *Camellia*. From Mr. Bull, Chelsea, came *Imatophyllum miniatum*, *Cypripedium villosum*, with two fine blooms, and a small plant of *Camellia Bicolor de la Reine*; also *Dracæna ferrea variegata* and *Aralia Sieboldi*. We also noticed *Schizostylis coccinea*, a new Caffarian plant with bright scarlet flowers, coming from Mr. Beech, gardener to T. Alcock, Esq., M.P., Epsom. Plants for dinner-table decoration, window-boxes, and baskets of *Hyacinths* and other spring flowers, were contributed by Mr. Greeves, Bayswater Road, and Mr. Lucking.

Mr. Bullen, gardener to E. Budd, Esq., Leatherhead, exhibited two good Queen Pines and excellent Sea-kale; Mr. Tillyard, fine Muscat Grapes and new Black Hamburgs, with well coloured berries; and Mr. Meredith his Black Alicante in excellent condition, though it had been ripe for eight months and three days. Of these it was stated that they had been grown in 12-inch pots, forcing was commenced on the 14th of January, 1864, and the bunches were ripe on the 1st of July. Mr. Ingram likewise exhibited seven dishes of Apples in excellent condition.

FAILURE OF HYACINTHS IN GLASSES.

IN the last Number of the Journal "V. G. C." says his *Hyacinths* in glasses have failed him. You give him the probable reason. Now there is a word or two which makes me think the cause named by you is not perhaps the true one in this case. The words referred to are "the glasses have been and are kept in the window of a warm room by day."

Now last year I had two *Hyacinths* in glasses in the window. The sun shone on the glasses. The *Hyacinths* made root, and grew partly as "V. G. C." says his have done. Now they partly opened, then died. The reason to which I attributed it was that the sun made the water very hot (160° or 170°), the bulb-shape of the glass causing this I think. At all events they became so hot that you could only just bear to hold the glass. Now if "V. G. C.'s" warm room warms his glasses as they were in my case, I think that would be the probable cause.—W. N. B.

DOES LILIUM LANCIFOLIUM DEGENERATE?

"D., Deal" asks "Does *Lilium lancifolium* degenerate?" I think it does not when receiving a uniform cool treatment, and permitted to grow, flower, and go to rest, at its own natural season.

Under certain modes of treatment I have found them degenerate very quickly. In fact forced bulbs I have witnessed become year by year less, until they appeared to be wanting in vigour sufficient to carry a good flower singly; and, strange as it may seem, I have often noticed that those bulbs which produced the finer spikes of a past season were the least when potting was done in the proper season, and we were able to examine them. I have, however, never been driven to obtain a fresh supply by purchase, as I invariably seek the best from our plantations in the open ground. These are nice healthy bulbs when three summers old, and they well recruit our stock. It may be worthy of note that *L. find rubrum* is on an average a better forcer than the generality of the others.

I am convinced that there is nothing so prejudicial to the constant good health and robustness necessary in this *Lilium* for a good display as strong manures, especially those which are partly decomposed, in immediate contact with the bulbs. Such contact is highly causing them to become scabbed

and unhealthy. Where no undue excitement is necessary, as with the early-flowered, I have ever seen the mixture of equal parts of loam and peat produce the cleaner bulbs.

I cannot wholly endorse "D., Deal's" remarks with reference to the adaptability of these plants for exhibition. I admit having seen specimen pots staged with the flowers far inferior to those often produced out of doors under very adverse circumstances, the confined growth and stained flowers having evidently been produced by ill-directed efforts to keep them back to aid in making up a set: hence the idea erroneously entertained with reference to so pleasing a class of plants.—W. EARLEY.

NEW BOOKS.

Land and Sea. By PHILIP HENRY GOSSE, F.R.S. London: J. Nisbet & Co.

WHOEVER wishes to lead any one to study natural history by showing the beauties, the wonders, and the charms derivable from rambles inland and seaward, should induce the desired student to read this book. Not that it is suited to the young only, for we have perused every one of its pages with pleasure and benefit, although "time has thinned our flowing locks, and the few we've left are grey." Cuyper the painter throws the sunlight on his pictures so clearly, that he seems to have dipped his pencil in light and fixed it on his canvass; and Mr. Gosse has been as successful in word-painting—his descriptions are so vivid, and evince such touches of things as they were seen, that he must have a palsied imagination who cannot realise some of them. We should like to give extracts as evidence—the description of the myriads of sea fowl on Lundy Island—the scenery about Brandy Cove—the deep sea organisms—the sea anemones—the plants and insects about Babbacombe—the Torbay sponges—the Goby hunting, and many others—but we cannot spare the space. We will, however, find room for this from "A Day in the Woods of Jamaica."

"We are mounted; and now let us rapidly get over the lowland slopes, to reach the loftier regions as early in the day as possible. The sun has not yet risen; and there is a dewy freshness in the air, as the dying land-wind of the night comes off in intermittent breathings, bringing the perfume of ten thousand flowers. Here, between cliffs of limestone, where creepers festoon the rock, and the noble trumpet-blossoms of the *Portlandia*, snowy white, and each 8 inches long, hang down from the clustering foliage out of every fissure—we make our way up a steeply rising track. The cliffs on either hand soon begin to recede, and we emerge on a road between pastures of Guinea-grass, whose brightness never withers under the driest seasons. Orange trees line the road, loaded with their golden fruit; and Sops and Custard Apples, and luscious Naseberries and Guavas, are scattered over the fields. Birds have awaked: the Petchary, earlier than the yard-cock, long ago piped from the fronds of the tall Cocoa Palm; and yonder we see one continuing his simple song with unabated energy, opening ever and anon, as he shifts from twig to twig, the bright golden coronet upon his head. Ha! he is not doing that for nothing. It is the expression of excitement. He has ceased to sing; watch him! A large beetle is crawling near, which is in the act of spreading his wing-sheaths for flight. Off it sails on drony wing. The Petchary instantly makes sail too; catches the heavy prey, and bearing it in triumph to his watch-post, beats it to pieces with his strong hooked beak, and swallows it.

"Sweetly from the tangled woods of yonder hill issue the mellow notes, soft and broken, of the Merle; you would think it your own familiar blackbird by the note, and would scarcely be undeceived by a sight of the bird itself; but it is a species peculiar to us. What we here call Blackbirds are larger birds, allied to the cuckoo; impudent, clamorous, sociable creatures, with a noisy intrusive cry, like "Going away! going away! going away!" as they sail along on short, heavy wing, and long, balancing tail, close to the ground. There! we hear a flock of them now; and yonder they are in the cattle pasture, blackening the ground. They are cutting the droppings through and through, searching for maggots and worms; and for this purpose they are provided with a very deep, tip-like ridge on their beaks,

which serves them as a ploughshare. See, too! on the backs of the patient kine, and clustering around their feet, are other sable attendants; sable they look from hence, but if we were close we should find them adorned with the richest steely purple and blue-green reflections. With what business-like earnestness each searches among the hair of the cow he has selected to patronise, digging for bots and ticks; or walks round and round, with the ivory white eye turned up, scrutinising the grazing beast beneath, and now and then springing upward to seize the insect prey. Away goes one, the boat-shaped tail folded on itself, with a sharp metallic cry, which reminds you of the smittings of a smith upon his anvil. From this sound we call the familiar bird the Tinkling.

"As we proceed we hear the low sweet cooings of hundreds of Doves of various species coming from the woods. These sounds are eminently characteristic of the early day in these wooded slopes. The loud and vehement call of the White-winged Turtle-dove, 'Two bits for two!' is pertinaciously uttered; or now and again exchanged for its stammering cry of eight notes, of which the last is protracted with a moaning fall. The Pea-dove shows its plump form of purplish fawn colour, and its large melting gazelle eye, on the road before us, dusting itself almost under our horse's feet, or sits in the shadow of the groves, and coos, 'Sary coat true-blue!' And Ground-doves, no larger than sparrows, congregate in small flocks on the pasture-lands, searching for seeds of grass and weeds, and shout 'Meho! meho!' or a loud and hollow 'Whoop!'"

"Look at this ancient Silk-cotton tree! what a fine object is it, illumined in the morning sun! The enormous perpendicular spurs stand out like radiating walls from the huge trunk, looking almost as white as marble in the bright light, and throwing the recesses into dark shadow. Trace up the vast pillar-like trunk! the eye wanders up a hundred feet before it detects a branch to break the uniformity of its column; there the huge boughs spread horizontally, each one a vast tree for bulk and extent. What an aspect of strength in those contorted and gnarled limbs! How far away they carry the umbrageous canopy of foliage! And see, too, what a microcosm is such a tree as this! The hoary trunk is studded at intervals with tufts of parasitic plants of the Pine-Apple tribe; these are called Wild-pines; they do not bear eatable fruit, but their blossoms are often of great splendour. There is one now in flower: from a tuft of rigid arching leaves, which form sheathing cylinders at the base, springs a fine spike of closely-set flowers, of the richest purple and crimson dyes. Another kind has the sheathing leaves more compactly overlapping in a sort of herring-bone or zigzag fashion, whence projects a longer, looser, and more branched raceme of scarlet and yellow blossoms. There are many not now in flower, for they vary in their season of blooming, but the leaves show that they differ in species, though they possess a general family resemblance. One sort, common enough, is not at all ornamental. The negroes call it "Old Man's Beard;" the stems are very long, and as slender as wire, which form great ragged pendulous tufts, of a dull hoary grey hue.

"And there, in the forks of the huge limbs, grow enormous matted masses of various vegetation, too remote from our eyes to be identified in detail; but we discern bunches of Orchideous blooms hanging in the air; and feathery Ferns arching out their elegant tracery; and creepers running along the boughs, and what look like tussocks of wiry grass at intervals, but which are small tiny-flowered Orchids, and long, long ends of green twine hanging many yards in length, now looped up in a loose bight, now swinging in the wind in mid-air, now almost touching the earth, and dividing at their extremities into three or four smaller threads."

A Practical Treatise on the Grape Vine. By WILLIAM THOMSON. W. Blackwood & Sons, London and Edinburgh.

In the short space of three years Mr. Thomson's admirable treatise on the cultivation of the Grape Vine has passed through four editions. Such an event is not to be wondered at, when we consider the experience of the author and the way in which he has, through these pages, communicated that experience to others. No better test of the appreciation

in which the work is held can possibly be furnished than the appearance of the fourth edition, which contains some new matter that has suggested itself to the author since the last edition was published. We observe there are two new chapters—one on "Scalding," and the other on "Stocks for Tender Vines," which, as it is a subject that has been much agitated of late, we will transcribe:—

"Those who have paid most attention to the subject have come to the conclusion that many of the highest flavoured of our Grapes, which are at the same time the most delicate and difficult to grow with success on their own roots, will one day be grown with perfect ease when we have discovered the proper stocks for them, and that late-ripening varieties will be got to ripen earlier when grafted on earlier stocks. I have not myself proved the correctness of the latter, but have read of instances of it, and, reasoning from analogy, am prepared to believe it. Of the former I had a striking proof in the case of the Muscat Hamburgh on the Black Hamburgh stock. On its own roots I have not grown it above 2 lbs. weight, while on the Hamburgh stocks I have had it 5 lbs. weight, with larger berries and much better finished in every way than on its own roots. I have proved the Black Barbarossa to be a most unsuitable stock for the Bowood Muscat, so much so that the fruit never ripened at all on it, while by its side the Bowood Muscat ripened perfectly on its own roots. The importance of this experiment lay in the proof it gave that a late stock procrastinated the ripening of the variety grown on it; from which one is led to infer that an early stock, like Sweetwater or Chasselas Musqué, would facilitate the ripening of late sorts inarched on them. Of the excellence of the Black Hamburgh as a stock for such high-flavoured though delicate Grapes as Muscat Hamburgh, and the whole of the Frontignans, I have not the slightest doubt; and I have during last summer inarched these sorts and many others on it, and recommend others to do the same, feeling confident that success will be the result."

At page 28 we find the following valuable hints:—

"I can strongly recommend the following method of planting and treating young Vines, from my own experience of it in the past season. It is probably in its details new, but it only requires to be described to commend itself to all who have any knowledge of such matters. I had a large house to plant, chiefly with Muscats, in April, 1864. I had a stock of one-year-old plants in eight-inch pots by me; I cut the rods back to 4 feet in February, and allowed them to stand in a cold Peach-house till the 13th of April, when the border was ready for their being planted; I shook all the earth from their roots, and spread them out on the soil of the border, one Vine to each rafter, and 5 feet apart, covered the roots with 6 inches of soil, and gave the whole a good watering, with water at a temperature of 150°, and covered the surface with an inch of dry soil to prevent, to some extent, the escape of the heat communicated to the border by the warm water. The Vines were just bursting their buds when planted, and instead of adopting the usual practice of stopping or rubbing off all the buds but one or two, I allowed all to grow, and tied them carefully to the wires; by this means I had in some instances ten rods to one Vine, all of which have, during the season, run to the top of the house, and partly down the back wall, a distance of 30 feet, and many of these rods are as strong as ever I had previously seen a single rod from a Vine the first year it was planted. At this date (6th January, 1865) they are not yet out down, and the whole house is a perfect thicket of wood. I will shortly cut back all these Vines to within a foot of the front sashes, and train up two rods from each this season, for fruiting in 1866; and I need not tell those who know that a plant makes roots in proportion to its leaves, that Vines treated as I have described will have an enormous excess of roots formed in the border, as compared with others treated on the one-rod and pinching system, and that the bearing-rods they will make this year will be in proportion to the extent and vigour of their roots in the soil. I have just measured one of them that, when planted in April, was not thicker than a writing-quill, and I find that it is now 34 inches in circumference, and has ten rods perfectly ripe to the top of the rafters, a distance of 21 feet. If, instead of permanent vigour and productiveness, an immediate return were the object aimed at, I have no hesitation in say-

ing that such a Vine would yield 50 lbs. of Grapes this autumn."

We cannot too strongly recommend Mr. Thomson's treatise as a thoroughly practical and sure guide to the cultivation of the Vine.

HINTS ON WINDOW GARDENING.

WITH this title, Mr. Walter H. Bosanquet has published at the price of one penny, a sheet of directions and warnings for those of "the working classes," who, living in towns, yet delight in growing potted plants either for the decoration of their windows, or for exhibition. The directions and warnings are all good, and we recommend those who wish to encourage such praiseworthy domestic gardening, to distribute copies among their labouring neighbours; for such purpose it may be had at our office for 8s. per 100.

Mr. Bosanquet is an enthusiastic encourager of town window-gardening, and there is no better aid to success than enthusiasm. He has corresponded with the Council of the Royal Horticultural Society on the subject, and the Council have appointed a Committee for arranging an exhibition of plants so grown. Mr. Bosanquet is a member of the Committee.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE Anniversary Meeting of this Society was held on the 23rd of January, when the usual routine business was transacted, the whole of the officers of the preceding year being re-elected without opposition, and the Council elected, consisting of Messrs. Hamlet Clark, Dunning, McLachlan, Pascoe, Shepherd, Smith, Stainton, Stevens, Weir, Moore, Edward Sheppard, A. Sheppard, and W. W. Saunders. The four last-named members replaced Messrs. Bates, Grut, May, and Wallace.

The President delivered an address, in which he reviewed the Society's proceedings during the past year, as well as the general progress of the science, for which a cordial vote of thanks was passed, as well as for his conduct in the chair. Votes of thanks were also passed to the various officers of the Society.

The General Meeting for February was held on the 6th ult., the chair being occupied by the President, F. P. Pascoe, Esq., F.L.S., who returned thanks to the Society for his re-election as President, and who nominated as his Vice-Presidents for the ensuing year, Messrs. Saunders, Smith, and Stainton. Various publications of the Royal Society of London, Belgium, and Moscow, the Linnean Society of London, as well as the continuation of M. de Saussure's work on the Natural History of Mexico and the Antilles, were announced as having been presented to the Society since the last Meeting.

Mr. Brewer exhibited a minute species of Beetle, *Corticaria truncatella*, of Mannerheim, new to this country (allied to *C. fuscata*), which he had taken in some numbers at the roots of marine plants, at Worthing; also, specimens of the rare *Ceutorhynchus biguttatus*, from the same locality. He had also taken the rare *Latridius nodifer*, at the roots of plants at Hampstead.

Captain Cox sent some portions of the wood of a dog kennel, the crevices in the decayed parts of which were swarming to an extraordinary extent with the Dog Tick, *Ixodes Ricinus*, in different states, accompanied by some observations on these insects, which he had succeeded in destroying by rubbing common grease over the parts of the bodies of dogs infested by them. The curious fact recorded by De Geer of the position of the male nestled on the breast of the female was observed in many of the specimens forwarded, and the young when hatched were observed to have three instead of four pairs of legs.

Mr. F. Bond exhibited, on behalf of Mr. Rich, a further series of the parti-coloured males of the common Ghost Moth (*Hepialus Humuli*), from Lerwick, one of the Shetland Islands; from whence also *Bombus Smithianus* (White, *Proceeds. Linn. Soc.*), had been received, that being the only known locality for the species.

The President stated that he had recently received specimens of the various species of Beetles, *Cassidyphus* from Aus-

tralia. Hitherto the genus had only been found in Portugal, Spain, Sicily, the Morea, Algeria, Calcutta, and India as far as Rangoon, but not in the eastern islands. Its discovery, therefore, in Australia was a remarkable fact in entomogeography. Professor Westwood stated also that he had recently received it from Zambesi.

Mr. Baly read a memoir containing some further descriptions of new exotic species of *Phytophagous Beetles*.

The President announced that the Council had resolved to offer two prizes of five guineas each to the authors of the two most satisfactory papers on questions of economic entomology, to be decided at the close of the present year.

AGATHÆA CELESTIS—EDELWEISS.

In your Number of February 14th you say that *Agathæa celestis* is tender "even in the mild climate of Ireland." I beg to say that I have a plant of it which has stood out of doors for two winters without any protection. It is the variegated sort.

Your correspondent "M. A. E." will not succeed, I fear, in growing Edelweiss. The inhabitants of the Tyrol cannot keep it alive long when transplanted from its native crags on the highest summits of the mountains. I do not think it can be the *Leontopodium* Mr. Fish mentions, because the flowers are white, not yellow. I enclose a specimen gathered on the mountains near Salzburg.—E. F. M., *Co. Clare*.

[In the south-west of Ireland your climate is far more genial than in other districts of the island. *Leontopodium helveticum* is the same as *L. vulgare* of some botanists. Although the corolla is not yellow, yet the dense crowd of anthers in its centre are, and would be, impressed on Mr. Fish's memory.]

EPIPHYLLUM CULTURE.

IN answer to a correspondent, I will commence by observing that sometimes *Epiphyllums* are found as epiphytes on the borders of rivers in the warmer parts of America, associated with epiphytal Orchids, *Tillandsias*, and other plants of half-epiphytal habit. This is particularly the case in Demerara; on the borders of the river of that name *Epiphyllum speciosum* is occasionally found as an epiphyte; but we are told on the authority of Mr. Colley, who was sent out in 1834 by J. Bateman, Esq., to explore that country in search of Orchids, that it seldom presents a vigorous appearance. Our experience of them in cultivation verifies this statement, that *Epiphyllums* are not strictly epiphytes. If not epiphytes they certainly require a similar mode of treatment, and grow well with the culture given to cool Orchids, but having no pseudo-bulbs they cannot withstand so much dryness, and yet they will resist drought for a lengthened period. A period of moisture and corresponding warmth is essential to free growth, and this should continue when once it commences until the growths have attained their full size, and a fullness of parts that approaches plumpness; and a period of rest through exposure to more light and a drier atmosphere is likewise necessary.

Epiphyllum truncatum, and its allied species, or those that flower from the points of the fleshy stems, and in which the branches have a tendency to droop, are cultivated in two ways—first, on their own roots; second, grafted as standards. They are handsome in either way, but I think them much more so on stems about 1 foot or 1 foot 6 inches in height. Very fine objects are obtained by grafting two scions on the *Pereskia* stock, on opposite sides, at 1 foot from the soil, two more 9 inches higher on the stock, and one 6 inches above the last on the top of the stock. The result is a pyramid 2 feet 3 inches in height. The most suitable stock is the *Pereskia aculeata*, and the most approved mode of grafting, side or tongue grafting, the scion being of such a thickness as to correspond with the stock. To secure the scion in its place the strong spines of the *Pereskia* may be run through the scion into the stock, and the graft bound rather tightly with bast, some moss being put on to secure a little moisture and exclude air. Grafting is best performed in spring when the plants are growing.

Cuttings of all the kinds strike freely if inserted in any poor light, sandy soil. Cuttings put in in spring in a mo-

derate heat, with the soil just moist (if kept very wet they are apt to rot at their base) will be well rooted by autumn. In the spring they will be ready for potting singly into small 32's or 24's, according to their size.

We have thus two descriptions of plants, those grafted on stems, and those on their own roots; both require the same treatment, and of these young plants I will detail the culture up to the period of their becoming specimens.

The plants after blooming should be potted, for if the wood is well ripened they will bloom in the cutting state; but it is not advisable to allow this, we shall, therefore, pot them in the first week in February, in a compost of two-thirds light loam from rotted turves, and one-third turfy fibry peat, with a free admixture of sharp sand. River sand will answer as well for this purpose as the finest silver sand. Chop the compost tolerably fine with a spade, but do not sift it, for it is all the better to be open or porous. In the absence of peat, leaf mould may be substituted. Drain the pot to one-third its depth, place a little sphagnum above the drainage to prevent the finer particles of the compost being washed down, and so choking it. Turn the plant out of its pot, and remove all the old soil not filled with healthy roots, picking the soil from between the roots as much as possible. Give a moderate shift; large shifts are more injurious than beneficial, for it is better to under-pot than to over-pot this plant. Press the soil rather firm, but not tightly, and not too low in the pot, but as low as for a *Geranium*. If the soil is moist no water need be given for ten days, if the pot is plunged in a hotbed of 75°, which is desirable, as the cutting will strike root much sooner; but if placed on a stage the soil, if dry, should be moistened a little at the time of potting, and kept just moist until the plant begins to grow.

The most suitable situation is a house where forcing is carried on, for it will have a moist atmosphere, and be sprinkled with water of the same temperature as the house, morning and evening. The temperature should range from 55° to 60° from fire heat by night, with a rise of 10° by day without sun, but more, of course, on sunny days if accompanied by a corresponding amount of ventilation. When the plant begins to push a more copious supply of water should be given, and when growth fairly commences, the soil should be kept moist, but never so wet as to become sodden, which is too often the result of watering at stated times whether the soil is moist or dry. The want of water should be apparent before any is afforded, and then enough should be given to thoroughly moisten the ball, but the plants should be watered before the soil becomes so dry as to check growth. A moist soil and atmosphere being maintained, and the plants occasionally sprinkled overhead, they will grow rapidly, and will have made their growth by the beginning of July.

When growth is completed they are to be removed to a light airy situation, in what may be termed a warm greenhouse, where they can be exposed to the midday sun, and kept near the glass. It is presumed that they have hitherto had a slightly shaded position, yet near the glass, in the forcing-house. In the light airy situation in a cool-house they are to receive but little water, reducing it, however, gradually, and not permitting the stems upon any consideration to become limp or shrivelled. After remaining a few weeks in this situation the wood will be well ripened, quite brown-looking, and hard to the touch. If well ripened the wood rarely shrivels afterwards, even if the plants are not watered for weeks; but they should be occasionally examined, and a little water given so as to prevent the fleshy stems shrivelling. After the growths are ripened they should be kept near the glass, and sufficient moisture maintained in the soil to preserve the vitality of the plant. An occasional sprinkling overhead will tend to free the stems of dust; but a wet state of the soil must be avoided during the period of rest. A temperature of 45° from fire heat is sufficient in winter, if the soil is kept dry. Plants so treated will bloom in December if placed in October in a temperature of from 55° to 60°, and by introducing plants at intervals of a month, fine objects for conservatory decoration may be had throughout the winter. Those kept in the cool-house will bloom in April. This plant is without a rival for dinner-table decoration; specimens on 18-inch stems with a head as much through, and the points hang with hundreds of coral blooms, are much greater ornaments than those with

glass stems, the very slenderness of which is ever a source of insecurity.

The earliest blooming plants may be potted, placed in forcing-house, and kept there until the growth is such that though potting is not necessary oftener than every year; but the drainage should be looked to every season.

It will thus be seen, that for five or six months the plants are growing, and that at another period they are kept in state of rest. Though these plants do fairly in what be termed warm greenhouses, they require an increase of heat in spring, and unless they have the heat of a vinery they will not bloom with certainty. In a vinery where a fire heat is given in spring and through the summer can be grown well. Under this treatment they will bloom in spring; to bloom in winter they require the heat of a stove.

As the plants increase in size they should be potted in proportion to their growth, and if they become uneven the heaviest parts should be thinned out, and this is all that pruning they require. They may be kept for years without deterioration in small pots, by reducing the balls biennially or annually, and repotting in pots of the same size. As men producing five hundred blooms at once may be grown in a nine-inch pot. The finest plants are grown on *Pereskia* stock. Plants on their own roots seldom do more than a foot in height.

Such is the mode of treatment I have adopted with results, and it is much to be desired that those who have been successful in this branch of culture, would make known their practice through these pages, for of all plants none so gorgeous, nor so little cared for at the present time as the *Cactus* family. In fact, we generally see them but grown and blooming more freely in cottage windows than in the best garden establishments. About thirty years ago these plants received the care which they merit, and indifference to them which exists at the present time only be attributed to the introduction of so many plants, though less useful and ornamental. Dry stoves were common then, but now there is scarcely one to be found in the land.—G. ABBEY.

A RIBBON-BORDER.

I HAVE a ribbon-border 40 yards long and 6 feet wide; background is common Laurels. I thought of planting thus—Back row, No. 1, *Perilla*; No. 2, *Christine Geranium*; No. 3, *Brilliant Geranium*; No. 4, *Shrubland Pet Geranium*; No. 5, and front row, *Cerastium tomentosum*. I dare plant *Verbenas* or *Lobelias* as they suffer so much from quite young from the rabbits. Last year I had *Lady Middleton Geranium* next the Laurels, then *Perilla*, but I assured that *Perilla* ought to be next the Laurels.—R. J.

[If you keep *Perilla* low enough we certainly should prefer strong plants of *Lady Middleton Geranium* next sombre Laurels. Discarding as you are obliged to do, *Verbenas* and *Lobelias*, we would rather plant thus—*Lady Middleton Geranium*, *Perilla*, *Christine Geranium*, *ye Calceolaria* (*Aurea floribunda*), *Brilliant Geranium*, *Cerastium tomentosum*.]

THE ACTION OF AROMATIC PLANTS ON SILK WORMS. M. E. Faivre details the following experiments to the French Academy:—"Silkworms exposed to the action of wormwood but not in actual contact, were very much excited, they refused to get away. The pulsation of the dorsal vessel was augmented and their bowels purged; in a few hours they died. Fennel produced similar results on the nervous system, and a marked one on the secretions. Balsam-tree acted still more powerfully, even killing the sick worms, causing the healthy ones to emit their silk. Common tansy was less violent. The effects depend upon the quantity of the odoriferous herb employed, and on the condition of the silkworms. When healthy worms were supplied with tansy leaves and exposed to the aromatic, they ate the food, and made cocoons which were considered of superior quality."—*Dublin Medical Press*.

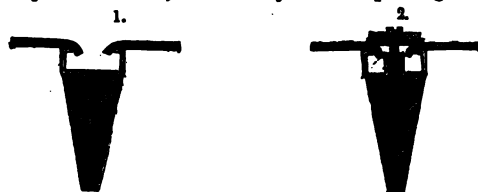
[These facts suggest that gardeners should try the effect of their enemies, the caterpillars, of syringing them with water in which tansy and other strongly scented herbs have been soaked or boiled.]

GLAZING WITHOUT PUTTY.

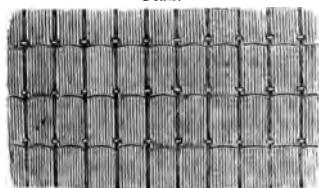
In addition to the various suggestions for carrying out this practice which have already appeared in our pages, we have some woodcuts and notes from Mr. Messenger, horticultural builder and engineer, Loughborough.

The glass used for this glazing has the sides turned down, as shown in No. 1, which conveys the water into small gutters made of lead, copper, zinc, or iron; or the sash-bar itself is made with a gutter in it.

The mode of securing the glass down to the gutter, is shown by section No. 2, which is by a screw passing through



Plan.



Glazing which requires no putty to make it waterproof.

a brass plate and india-rubber pad into the wood or metal bar; the india-rubber slightly pressing upon the two sides of glass keeps it in its place.

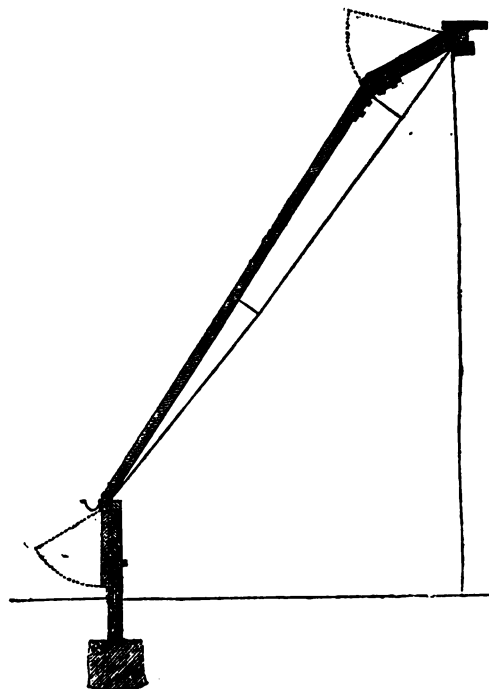
The plan shows the brass plates and shape of the glass, which is so arranged as to convey the condensed vapour into the gutters internally, as well as the rain externally.

The first cost is rather more than that of ordinary glazing, but is much more than compensated for by the following advantages—viz., no paint is required, saving the usual

periodical expense of painting once in every two years; any handy labourer can replace a square of glass when broken; all annoyance of pieces of glass and putty falling amongst plants, &c., during repairs is avoided; also the appearance is far superior, and minor advantages would be experienced by its use.

Where it is

necessary to make it air-tight as well as water-proof, a back putty is used, but which is never exposed to the

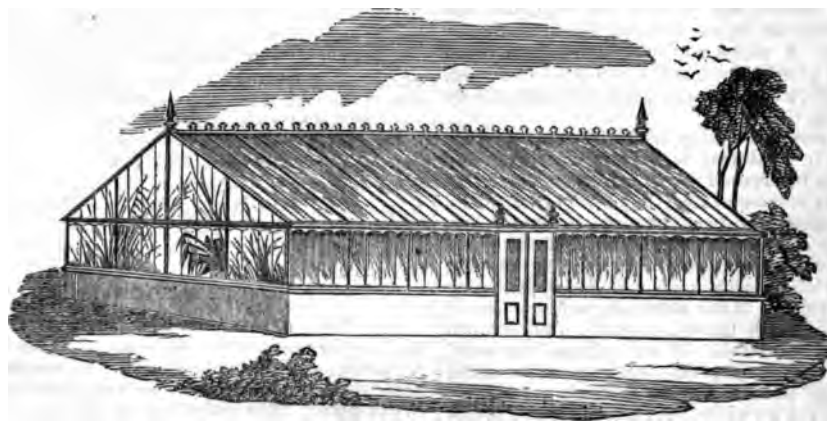


action of the weather, so that it is as durable as the glass itself.

The above is a section of a very simple and effective structure for covering

Peach, Fig, or Apricot walls, and which could, if heated with hot water, be used with advantage for a very early vine-ry. It is, in fact, when unheated, a lean-to orchard-house.

The annexed is a greenhouse erected by Messenger, at Goggerdan Hall, the residence of P. Lovedon, Esq., of Aberystwith.



SEWAGE IRRIGATION.

We have received a note from an intelligent correspondent, who, like many other persons, seems to have derived a very erroneous impression of the value of sewage when applied in small quantities. He observes:—"The subject of irrigating grass pasture with liquid manure is rather new. I have about ten acres of grass—four of old, six new-sown last spring. I have also a large cesspool. How can I use this manure? Where purchase the cart, where the pump? Any information on this subject given directly to me, or by article in your Journal, will be thankfully received."

... only must be that the correct advice and one to

employ a watercart to spread the sewage over grass. Such a sprinkling is of little perceptible use. We must not be led astray by certain schemes, lately announced, for squirting the water over the land in small quantities. If the tank receives the sewage of only one house that will be best applied to not more than one-eighth of an acre of grass. The gardener knows that sewage is an admirable liquid with which to water his kitchen-garden plants; but he is well aware that to derive any material benefit he must give them a good soaking—a small shower of it is useless. On the sewage-irrigated grounds of Edinburgh the grass is the

roughly soaked about every eighteen days, and these meads have for many years been let at an annual rent of from £20 to £30 an acre. At Croydon about 4000 to 5000 tons of sewage per acre are used every year, and this produces about 32 tons of grass, worth on the ground £1 per ton. Lord Essex, Mr. Mechi, and the Rugby Commissioners have

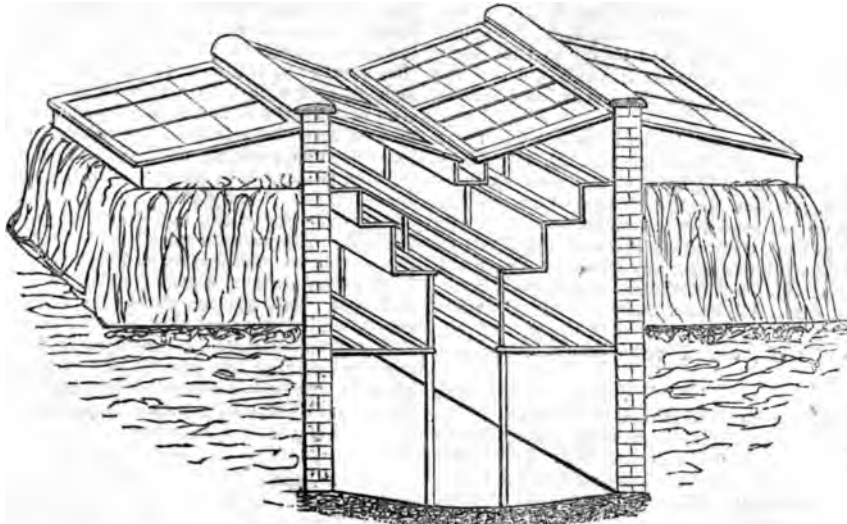
all given up using sewage in small quantities for grass. If you can arrange so that your house sewage can be directed on to your land by its own gravity, well and good, or by the use of a common lifting iron or wooden pump; but it would be a profitless effort to use a cart.

WINTERING PLANTS WITHOUT ARTIFICIAL HEAT.

IN No. 196, "ISLE OF WIGHT" made a suggestion with which I was much pleased, and at the time I resolved to give you a sketch of a pit which might be rendered useful all

the year round; press of business has not permitted me to do this sooner, but better late than never.

I propose to sink the pit—say 5 feet (this, however, must



Pit for wintering plants.

depend on the nature of the ground), and build a nine-inch wall above ground—say 6 feet high, against which the dung for hotbeds could be stored. This would keep the pit warm above ground, and to prevent water filtering into the pit, a

bed of concrete should be formed under the dung. The form of the roof will give plenty of light without the glass catching the wind.—Geo. K. GEYELIN, C.E., London.

HARDY FERNS:

HOW I COLLECTED AND CULTIVATED THEM.—No. 11.

IN my last number I brought my Fern collection to an end; but I feel as if I had yet a last word to say—a small, very small sum to cast up of the amount of work, or rather play, that I have done in the Fern papers, in which I have so pleasantly wandered back through familiar scenes and amongst familiar friends.

I have mentioned all the species of English Ferns, with the exception of the *Trichomanes radicans*, which, being an Irish Fern, hardly forms an exception. I have never found *radicans*, have never grown it, and have never but once seen a really thriving plant of it. I have now in cultivation all the species of English Ferns, excepting the two *Woodsias*,* the *Asplenium germanicum*, and the *Hymenophyllums*. They consist of

Adiantum capillus-Veneris, with the Dunraven variety, if variety it be.

Allosorus crispus.

Aspleniums trichomanes, *viride*, *fontanum*, *ruta-muraria*, *lanceolatum*; *Adiantum nigrum*, with varieties; *septentrionale*, *marinum*, with Cornish variety.

Athyrium Filix-femina, with varieties.

Blechnum spicant, with varieties.

Botrychium lunaria.

Ceterach officinarum.

Cystopteris fragilis, with varieties.

Cystopteris montana.

* I may also now add the *Woodsia livens* to my list of Ferns under cultivation, a plant of this rare and delicate Fern having been kindly presented to me by Mr. Mitchell, of the Glen Nursery, Bacup, Lancashire.

Cystopteris elvina.

Lastreas Filix-mas, with varieties; *cristata*, *thelypteris*, *oreopteris*, *rigida*, *dilitata* (with varieties), *recurva*.

Ophioglossum vulgatum.

Osmunda regalis.

Polystichums aculeatum, with varieties, *angulare* (with variety), *lonchitis*.

Polypodium vulgare, with varieties, *dryopteris*, *phlegopteris*, *calcareum*, *cambricum*.

Scolopendrium, with varieties.

So the sum I have to add up of what I have written about seems very small, although it has taken ten years to collect together the parts of which it is composed. But what amount of figures would tell of all the happiness that it has been to myself and others?—the happy days, the merry hours—hours of pain forgotten and of sorrow soothed—hours in which, when alone, the soul, winging itself from the material things around, has flown up on bright thoughts to the blessed world whence it came. Who could number up these thoughts, or count the circle of blessings that has widened out from them?

A friend of mine, once walking in Yorkshire during a severe drought, met a labouring man, and in passing said, "What a blessing a shower would be, my friend." "Ah!" said the man in reply, "it would let loose a many prisoners."—The imprisoned seed, parched and thirsty, waiting, bound in the fetters of its husk—the million buds on every tree, all waiting for the genial shower to loose their prison-bonds and set them free. What beautiful thoughts the good God

must have given this poor labouring man ere he could have framed his simple touching speech!

Bulwer says that the face of Nature is the only face that as we grow old never changes to us. Friends grow old, change, and pass away; but the old Oak of our youth is the old tree still. The hill has still the same shadows, the valley the same musical river. Their voices speak the same truths in the same tones; the vexed murmurs of the world touch them not; they praise God day and night, though man in his ungrateful egotism will not listen, will not echo their simple song.

Every created thing has something good and pleasant to say to us if only we will listen aright—some beauty to be revealed if we will seek for it—some wondrous exhibition of skill, greater and more perfect than can be shown by the greatest living man; and, as we search and look, the voice, the beauty, and the skill will all lead us up to that high communion the Most High encourages His children to hold with Him. A few more words upon the Ferns, and I have done.

Of all that I have named the Aspleniums are the most difficult to manage as a race. They one and all hate stagnant moisture. They require light, and sun, and shade—shade for the roots, and sun for the fronds. Lastreæ are less difficult; they do not need sun as a necessity—they will grow in damp and shade. *Cystopteris* is a very easy Fern to cultivate; it will suit itself to almost any locality. *Osmunda* requires damp and shade. *Polystichums*, and *Polypodiums*, and *Allosorus* need sun. All Ferns must have good drainage. I always mix good garden earth with the soil of old banks, the *débris* of trees, &c. I water nearly every day during the summer.

Do not be afraid of Ferns. They like being moved and divided, and will forgive almost anything but neglect.

Never plant a Fern upon a rock or stone; there must always be depth of soil with drainage beneath. If a Fern does not do well in one situation try it in another, but never see a plant looking unhappy without trying to find out the cause and seeking to remedy it.

Before these pages are printed I hope to be hunting Ferns in the neighbourhood of Naples; and if the Editors of THE JOURNAL OF HORTICULTURE will kindly give me a corner I shall hope to tell my experiences when I return. Till then adieu!—FILIX-FEMINA.

STRAWBERRY PLANTS NOT FLOWERING.

I HAVE some very strong healthy plants of Keens' Seedling. I treated them in the usual way: had them piled up in ashes until the last week in January, then started them for forcing in a heat of 45°, giving a rise of from 5° to 10° with sun. The plants are stronger than those I have grown before, and gardeners that have called to see me thought, as I did, that there would be a good crop from them, but there is not a blossom out of a hundred plants. Can you give me any information as to the cause of this failure?—A SUBSCRIBER.

[You say nothing of the size of the pots which contain your very luxuriant plants. We suspect that your plants are rather too strong, and that the buds were not sufficiently matured last autumn. We do not think our Strawberry plants will be quite so fruitful as usual, as we notice several pots coming blind, but we attribute it to the want of water in summer and autumn. The more luxuriant the plants the more ripening do they require in autumn.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE preparation of the various quarters destined for main crops must be persevered in whenever the soil is dry enough to admit of being trodden on without being too much consolidated. This is of great importance in the case of heavy soils; and those who have such to deal with should take advantage of every dry day that occurs. On such soils, too, it will be advisable to defer sowing main crops for a week, or even a fortnight; but on light dry soils the sooner the main crops are sown the better, because such soils are most liable to suffer from drought should it occur, and therefore

the sooner the crops are well established the better they will be able to resist its effects; if, on the contrary, the season is a wet one, they will be in the best possible condition to profit by it. *Beans*, sow the main crops, regulating the quantity by the demand. *Broccoli*, a small sowing of Grange's true Early White made now will come in useful by-and-by. *Cabbages*, make a sowing of the true Drumhead Savoy, also another patch of early Cabbage, and Red for winter supply. *Cauliflowers*, prick out the young seedlings on a warm border or on a gentle hotbed, and shelter them for a time with hoops and mats. *Celery*, the first sowing must be pricked out as soon as it can be well handled, and another sowing made of both Red and White. *Onions*, the principal crop should now be sown, and as it is a crop of some importance we offer a few words of advice. The ground having been trenched and ridged during the winter, is allowed to remain in that condition until the early part of this month; it is then levelled down, and marked out into beds 3½ feet wide with alleys 15 inches wide. Before the seed is sown the beds are raised 9 inches above the ordinary ground level by soil from the alleys, and when the beds have become perfectly dry the seed is sown and the beds trodden twice over by the feet until they appear as hard as a gravel walk. A very thin coating of soil is then strewn evenly over the whole, and finally the roller is passed over the bed. The narrowness of the beds enables the operator to weed clean with facility and without injuring the plants. Plants thus situated have a greater depth of soil than usual, and grow with greater sturdiness than those highly manured, whilst the great elevation of the beds enables a warm July sun to penetrate a considerable depth into the earth, slightly checking late growth, and, of course, inducing early bulbing. Take advantage of dry days to stir the surface of the ground between growing crops, and to prevent weeds from making their appearance.

FRUIT GARDEN.

Protect Peach, Apricot, and other choice fruit trees from spring frosts. Finish pruning and nailing as soon as possible. See that newly planted fruit trees are properly staked and mulched, and after high winds it is necessary to look over them and press the earth gently round the base of the stems. All danger of very severe frost being over, Figs may have the coverings completely removed and be neatly pruned and nailed; do not crowd them with wood. Finish planting Raspberries, also pruning. Let all the old leaves be cut away from Strawberry-beds, removing all runners, &c.

FLOWER GARDEN.

All trained trees and plants should receive attention. March winds are often destructive when the precaution of renewing old stakes and strings rotted by the damps of winter is neglected. A pretty floral effect may be obtained at an early season with *Narcissus*, *Hyacinths*, and *Heart-ease*, which may now be planted for the purpose. *Anemones* and the single *Wallflower*, last summer's seedlings, will shortly bloom; and in large masses the effect of their rich golden blossoms is magnificent. *Hollyhocks* for late blooming may now be planted, as it is best where they are grown extensively to make two or three plantings in order to insure a succession of bloom. These showy plants are very suitable for long lines, parallel with straight walks, walls, &c., where they produce a noble effect. If edgings are required to flower-borders they should be planted as soon as possible. *Box*, *Daisy*, *Chamomile*, *Thrift*, *Pansies*, the *Gentianella*, &c., are all used for this purpose. Let *Box* edgings be cut forthwith. Plant out *Carnations* and biennials in general, and let all perennials be removed without delay. Look to the sowing of annuals, also shrub and tree seeds. Finish the laying of turf, and get all alterations carried out at once. Let *Roses* in general have a pruning immediately. Those intended for late blooming must be pruned late.

GREENHOUSE AND CONSERVATORY.

Examine the soil of such plants as the different kinds of *Acacias*, *Templetonia*, *Gemista*, *Cytisus*, *Grevillea*, *Banksia*, *Myrtle*, *Brugmansia*, *Olea*, *Nerium*, *Eutaxia*, *Goodenia*, *Virgilia*, *Indigofera*, the varieties of *Cactus*, and others that may have been resting, to see that the drainage is efficient, and that no plant is rendered unsightly for the want of timely watering, pruning back, or stopping. Many an old corner requires routing out. Stop any untidy, rank-growing

shoots of Camellias that are taking the lead on those plants whose blooming season is over, and endeavour to keep a uniform growth both of wood and blossom-buds for the ensuing year. *Ericas* to be top-dressed or repotted. Commence syringing on a fine morning such plants as are freely making their growth, and those that have lately finished flowering. *Tropeolums* will require attention. *Pelargoniums* and *Calceolarias* will require increased pot room. Apply tepid clarified manure water to those well established in their pots, if healthy and showing flowers. Do not omit slight but frequent smokings of tobacco. *Fuchsias* for general decoration, or as single specimens on grass, should be brought forth from their hiding places without delay, and introduced, if there be room, to a warm end of the greenhouse. These who have bottom heat to spare, and desire very large specimens, may select some of the best plants, disroot, and repot them, and plunge them in a bottom heat of 75°.

STOVE.

Some of the plants which have been blooming for many weeks, and which are exhausted, should be cut back—such as *Euphorbia jacquiniiflora*, *Gesnera lateritia*, *Geissomeria longiflora*, *Eranthemum pulchellum*, *Justicia salicina*, *Linum trigynum*, *Poinsettia pulcherrima*, &c. The plants of *Poinsettia*, *Euphorbia*, *Clerodendron*, *Aphelandra*, *Gesnera*, &c., that have previously been cut down, and are now breaking, should be shaken out and repotted in good fibrous turfy loam, coarse sand, and a portion of charcoal. Prick off carefully into small pots as they appear in the store-pans or pots the various kinds of *Achimenes*, and put in another batch, likewise various *Gloxinias*, they delight in a moderate bottom heat at this season. Continue to increase the heat and humidity in the case of *Orchids*, and see that plants of *Gongoras*, *Stanhopeas*, and some of the beautiful *Dendrobiums* that are now making their season's growth, are not suffering from want of sufficient moisture. It is sometimes found essential to soak them once or twice in a tub of tepid water, and if a portion of clear cowdung water is added thereto it will do much good. Syringe carefully about the blocks and baskets that have plants of *Vanda*, *Saccolabiums*, *Sarcanthus*, &c., growing or adhering to them.

PITS AND FRAMES.

Those who have not as yet attended to the propagation of plants for bedding-out must now begin with all possible speed to put in cuttings of *Salvias*, *Petunias*, *Fuchsias*, *Verbenas*, and *Scarlet Geraniums*, so as to have good plants for bedding-out in May. Pay attention to watering and topping back weak and straggling shoots, so as to form robust, bushy plants. *Dahlias* should be started. — W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

OUTSIDE, the ground is still too wet to permit of much being done. Put more *Rhubarb* and *Sea-kale* in *Mushroom-house*, and cleared *Mushroom-beds*. Raised bed intended for *Cucumbers* under a frame. Our frames are shallow, some 10 inches in front and 16 inches at back. We raise the bed high enough at the back to give pretty well 2 feet of a slope to the front of the frame, and our boxes being so shallow we make a trench in the middle of the bed from 26 to 30 inches wide and 16 inches deep for soil, placing an old slab back and front. This trench prevents any likelihood of burning the roots from a too violent heat beneath, the confining the roots by the boards prevents too much luxuriance of growth, the heated leaves close to the boards give plenty of heat to the soil, the packing some earth close to the sides of the frame prevents steam passing in from linings, and as the frame sinks with the bed there is no necessity for regulating the height of the plants from the glass, as the soil on which they are trained and grown is just of the right height for the foliage. We thus escape all the trouble of frequent earthing-up, merely giving a little rich top-dressing when there is any sign of deficiency of vigour. Though wood is a bad conductor, still it does conduct heat; and making the bed wide enough at first to permit of banking-up to the top of the frame, or nearly so, secures a dry heat against the boards for the atmosphere of

the house which can be made moist at will by dewing the boards. After trying many modes we follow the above when we can, as being on the whole the most economical as respects time, labour, and material.

Thinned Lettuce among Radishes, which latter are now coming in nicely. Gave plenty of air to those in Carrot-bed, just above the ground, to prevent their coming with long necks. Watered with manure water strong Cauliflower in pots in orchard-house. Sowed Cauliflower, a pinch of Cabbages, and Celery in mild hotbed. Stirred up the soil among Cauliflowers under hand-lights, exposed the heads of Celery in beds to prevent rotting. Do not think we have had half a dozen of run or rotten heads as yet, and the heads are very sweet notwithstanding the dry weather and no water to which they were subjected. But for the shading with evergreen branches, it would have been all up with them. Prepared, also, a three-light end of a pit for Cucumbers, where they can have hot water. This is all very well where fuel is cheap; but if we did not manage to raise some beds under frames, &c., even with tree leaves chiefly, we do not know what we should do for dressings for the kitchen and flower garden.

FRUIT GARDEN.

Continued work very much the same as last week. Pruned out of doors in suitable weather; daubed with lime, soot, and anything nasty, to keep off birds from buds. Owing to the snow and frost, we were privileged with clouds of larks, that did us little harm except stripping, as if with a cutting iron, the outer leaves of Broccoli, &c., leaving the hearts mostly untouched. Partridges, now pairing, did the same office for us in the very cold weather. They and pheasants are sometimes troublesome enough, but they are nothing to the four-footed intruders in the shape of hares and rabbits. Even in their case the gardener, in general, where game is an object, should try every deterrent method, without resorting to the gun. The report not only breaks in on the peacefulness that should pervade a garden, but the passion is so apt to grow from what it feeds on, that not a few most estimable men as gardeners have got into great trouble from becoming too fond of shooting. We should never forget that, though it is praiseworthy to be anxious for the well-being of all under our charge, the gamekeeper ought to be equally anxious about the safety of his protégés. Where pheasants are numerous, wire guards may be necessary for Peas, before they are 4 inches in height. After they are staked, partridges and pheasants will do them less harm; but then the sparrows will come like locusts, and rip up the pods you want to send to table. Bat-folding among the shrubs would thin these birds now. Small threads, either white or black, run among dwarf trees and bushes, will help to keep them from the buds; and such threads, run along with little pegs a few inches—say 3 at first—above rows of seeds, will also keep them off. We thus saved most seeds last season, except Beetroot, Prince's Feather, and Love-lies-bleeding. The red seed-leaves of these things seem to be an irresistible attraction. It is best to sow them, in such circumstances, where protected, and transplant when a good size.

We have seen no more, as yet, of our enemy the brown beetle in the Peach-house, though we have looked anxiously for him every day. A few Black Prince Strawberries have been very fair for flavour, but, if they had little sun, they had plenty of air. The bulk of plants are much smaller than usual, and the Keens' do not come so generally good as usual, some pots showing little or none. The next lot will likely be better. We fear the buds of some were starved last summer and autumn before the rains came. We are now obtaining good reservoirs of water, and hope we shall never again have to pack plants behind sheds and in thick woods, merely that they may be shaded, and thus kept alive, whereas in the sun they would have been dried up and killed outright. The Black Prince Strawberry plants have hardly had a miss in a single pot. Of course all pots that do not show bloom should be turned out at once. In all early forcing we generally used to reckon on something like five per cent. of blind pots, but our early Keens' will be beyond that this year. Succession crops generally come with few or no failures. From several private communications, let us again urge on our friends not to plunge established pots in a hotbed before taking them into a house

heated by fire heat. If they choose now to take plants out of the ground to pot, as we will be obliged to do in a month or so, a little bottom heat, whilst the tops are kept cool, will do them good, but the bottom heat should decline as soon as the roots reach the sides of the pot.

In the *orchard-houses*, in bad weather, syringed all the houses with hot soap water—walls, woodwork, and trees—and then painted the trees with a paint made of clay, soot, lime, soft soap, and sulphur; and, when trees are fresh fastened to the wall, will use a thin wash of Gishurst. We may mention here that the wash of Gishurst for the Peach-house was strong enough to injure a few young shoots. We may also mention, in answer to many inquiries, that Gishurst is a capital thing used sparingly, and especially for amateurs, as it enables them to have a good wash without the trouble of mixing; and, if soaked and dissolved in water some twelve hours before using, the liquid loses its offensive smell for syringing, &c., and at the same time loses nothing of its insect-repellent properties. We could also speak favourably of Parmentier's and other washes; but, at the same time, truth compels us to say that the best remedy is to keep away insects by health, vigour, and unceasing attention, and that, as to paints over the wood, clay alone, or clay, sulphur, and soft soap, are just as efficacious in daubing up insects and their eggs as the finest compositions, with learned names, sent out in box or bottle. A little tobacco juice in the mixture will do no harm; but much, if hot, may do so. A little lime, if there is anything like moss or fungous growth, will also be useful; and in extreme cases a little nux vomica, cold. All such washes, in moderation, are safe, if cold; but if lime and sulphur, and nux vomica, are boiled, &c., the mixture ceases to be mechanical, and, used hot, may prevent all further need for using it again. Even lime and sulphur, mixed into a paste, and used as paint, are very different from lime and sulphur, heated or boiled together. By the latter mode a most powerful acrid liquid is produced; so that if a pound of lime and a pound of sulphur are boiled in a gallon of water, one quarter or gill of the clear liquid, when cool, would be strong enough to syringe with twenty gallons of water. White hellebore is also as destructive to many insects as snuff, and is much cheaper. Sulphur, as we have often stated, is chiefly useful, like lime, for destroying mildew or fungus, and for the fumes which it throws off in a temperature of about 160° or 170°, either with artificial or natural heat.

To return from this digression. Before tying the trees in the orchard-house, on the back wall, we have, after the washing, the old colour, however, remaining firm, coloured afresh the greater part of the wall, making fresh lime the chief constituent. In such lean-to houses, with so much light from the squares of glass between the sash-bar rafters, which squares are 20 inches by 12 in depth, a white wall would throw back too much heat for the well-being of the trees, before the foliage was fully expanded. We therefore darken the lime considerably, and this season we have added a good proportion of sulphur. Our bricklayer, who generally puts it on, is very particular in having the lime mixture fresh made and smooth to work with the brush. When the lime is slacked, it is worked with sufficient water to pass, by means of a brush, through a very fine sieve, all grit, if any, being rejected. To about four gallons of this are added three or four pounds of sulphur, previously made into a soft paste, and about two quarts of blueblack in the dry state, also mixed with enough water to make it into a smooth homogenous paste. These two articles are mixed with the smooth lime-wash, and the whole is put on rather thin, and looks black at first, but dries sufficiently white. Hot water is better for slacking the lime than cold, and the colour stands much firmer on the wall when so slacked. The sooner it is put on the better. If enough of mixture is made to take two days to put on, or if the job is left, the second day's washing will not be so firm as that of the first, and it will be apt to be a shade lighter in colour.

We have had so many inquiries how to take off the offensive white glare from limewash, that we may be excused for the above minutiae. Such a toned wall neither distresses by its brightness, nor saddens by its gloom; and instead of reflecting the most of the rays of heat and light so as to make everything uncomfortable near it in bright sunshine, it just reflects enough, and also absorbs enough to warm the wall,

so that it may radiate back a portion of the heat thus absorbed during the coldness of the night.

Fruit trees may still be planted, and after such a winter will do little worse than those planted in the autumn. It would be well to cover the ground with rough litter, move it aside on hot sunny days, and replace in the afternoon. In all cases where present labour is an object, a mound of fresh soil may be given to each tree.

ORNAMENTAL DEPARTMENT.

The snows and heavy rains have prevented much out-door work, except rolling the lawn and sweeping the walks of leaves, twigs, &c., and examining bulbs of all sorts to see if they were securely fastened in the ground. Also, the same as to all fresh-planted shrubs and trees. All planting of this kind should be finished as soon as possible. In all favourable weather: proceeded with planting for timber and cover, and this work now should also be finished without delay. The frost and the snow have rendered the hares troublesome, independently of tarred string, &c. Evergreens and other shrubs may be planted until the buds for the fresh shoots begin to swell.

In hotbed or pit, Lily of the Valley, Deutzias, Roses, Rhododendrons, and bulbs may now be more easily forced into flower for the conservatory. A little bottom heat will cause them to come better after the pots are crammed with roots. Hyacinths, Tulips, Narcissus, &c., in rooms, should have all the light possible.

Out of doors we shall prune all the hardier Roses as soon as the ground is drier, cutting Moss, Provence, Gallica, and the less vigorous-growing Perpetuals pretty well in. All strong growers, of climbing habit, Banksian, and Briars, do best when the small wood is thinned out, and the long well-ripened shoots left nearly their full length. From every bud a short shoot will come with clusters of flowers. It is best to cut out these old shoots in autumn, and depend on young, middle-sized long shoots again. When such Roses are used against walls or fences, they may be spurred in for years like a Vine, merely by thinning out the small spray from each node of buds in the beginning of summer, and cutting back to one bud in winter or early spring. Bourbons, Teas, and the more tender Chinas, should have the pruning deferred until April. Teas laid in by the roots in a sheltered shed, should now have the moisture at the roots examined, and the covering at the heads reduced. If mild weather continue the same lessening of protection should be given to those left in the ground. Now is a good time for grafting on stocks well-established in small pots, and then placing them in a mild hotbed. The sooner Briar stocks are pruned in and planted the better for budding in summer.

Rockwork and collections of Alpines, and the tender herbaceous plants, and even Wallflowers, &c., will want seeing to and firming, after the frosts and boisterous winds. Daisies and Heartsease may also be divided, using a little fresh soil round them. The smallest root pieces of the latter will do better than cuttings. Ranunculus may also want firming, also bulbs in general, and mice should be kept from them. Pinks may be planted, and plenty of air given to Carnations, Auriculas, Polyanthus, and the finer Primroses.

Put in a good many cuttings of Verbenas, Petunias, &c., as we like young plants better than old ones. Went on with Lobelias, &c., but the methods we have frequently detailed. Those made at present we put into vessels of some sort, but by-and-by we will dibble the cuttings at once into sandy soil upon a slight hotbed, and take the glass off them as soon as they are struck. We are so crammed at present that we can scarcely turn ourselves, but in a few weeks we will put a great many things out of doors under temporary protection.

Kept on potting Fuchsias, Geraniums, tying-out Pelargoniums, and giving larger pots to successional Primulas, Cinerarias, &c., and if we had a fair day would fill a shed behind a greenhouse with large plants of Scarlet Geraniums, that we may prune a part of our last viney, the Grapes in which will soon be over. We have a great many bedding plants in it already, but we want the whole floor, stage, and shelves, to clear the Peach-house of all bedding stuff, or the most of it. The trees are coming nicely in bloom, average night temperature close on 50°, heat applied to raise it to 55° and 60° during the day, and if sun come, of which we see little, we will with a little early air, allow it to rise to

10° or 15° more, and shut up early. Except on shelves of Strawberries, all shelves, stages, and floors, are as thickly set with plants as if these were so many grass blades.

Gardenias will now like dearly a little bottom heat in a dung or tan-pit. Ixoras will also be better of being plunged and the leaves examined for thrips or green fly. What is worse than either is mealy bug, and purchasers should be careful in selecting from clean stocks; only a very few of them are sufficient to overrun a place, and they will not confine themselves to plants, but get into every cranny of the brickwork, woodwork, &c., where scarcely any application will reach them. Dipladenias, Allamandas, &c., would be the better of bottom heat after repotting. In small houses it is advisable to pick away a good portion of the old soil, and then repot in the same sized pot, using fresh fibry soil. Clerodendrons that were pruned back and have now broken half an inch or so may also be repotted, shaking away a good portion of the old soil, draining well, giving fresh soil, and placing in bottom heat; if the shoots come too numerous thin out the weakest when from 2 to 3 inches long, and they will soon strike in a hotbed. Such tubers as *Gloriosa superba*, &c., should also now be taken from the pots in which they have rested in a rather dry state. The best time for fresh potting, is when the buds show signs of moving, draining well, and using fibry peat and loam, lightened with silver sand and nodules of charcoal. *Gloxinias* now beginning to push should either be top-dressed with rich compost, or the most of the earth removed from the tubers and these returned to similar or, at first, smaller-sized pots. They dearly like old dried cowdung mixed with the compost. The same may be said of the fine-leaved *Begonias* which have been set under stages, &c., to dry and the leaves to fade during the winter; when a little water is given to them, and they are placed in a temperature of about 55° or 60°, they will soon break, and then may have their rhizome-like stems separated, the most of the old earth shaken away, and rich light soil given. *Achimenes* and *Gesneras*, placed some in heat to start them; *Justicias*, flowering *Begonias*, and especially the pretty fuchsoides, *Eranthemums*, *Poinsettias*, &c., do best for small houses if the cuttings are struck now and in the beginning of next month, and the old plants thrown away.

We have taken care to keep a nice lot of soil dry, under cover, which is half the battle; and for all these tender plants we like it to be heated over a furnace, or in some suitable place, before using it. We have given all the air possible to bedding *Calceolarias* that are still in the pit, in which the cuttings are thickly dibbled out in October and November; but we must harden them off for turf-pits, as they are now standing too thickly. We forgot to say that, as a measure of precaution, we drew all *Verbena* cuttings through weak tobacco water, and were careful that the quick hands that took them off should also use the eyes quite as quickly, that every piece taken off should make either one or two cuttings, without a bit or a joint being wasted. It always shows great carelessness to see a bit wasted at the cutting bench at this season, after having occupied room all the winter. We also took the opportunity of stacking some very fibry turf 2½ or 3 inches thick. This, in bad weather, if we are scarce of pots, we will cut into pieces about 3 inches square, scoop out a hole in the middle, for more than half the depth, and use these for some *Geraniums*, and other things that do not plant well without a ball. We have placed a box on the material which covers part of the Vine-border, and therefore will have a little heat; and if these little bits of turf, each with a plant and fine soil in the hole, are placed there until the roots are coming through the turf, they may then be moved to leaf mould and soil in a Celery trench, and have a little protection there, until finally turned out. This is only a sample of what people must do if they have to make the most of, and obtain the most from, little room. It would not do to leave such turf pots in the mild hotbed, as the roots would get beyond all bounds; but when turned out, after being merely started, the root will cluster all round the turf like a wig, and be ready to extend wherever they have the chance.—E. F.

TRADE CATALOGUE RECEIVED.

Sutton and Sons, Reading.—*Farm Seed List*, March, 1886.

COVENT GARDEN MARKET.—MARCH 4.

The supply has improved, but prices are fully maintained. Pines continue scarce; Grapes and Peas are sufficient for the demand; and with Apples the market is overstocked, but good kinds for the dessert are not over-abundant. Savoy, Brussels Sprouts, and other Greens, are not over-plentiful. English forced Potatoes may be had very good at from 2s. to 3s. per pound; foreign ditto 6d. to 8d. Salads, &c., come in daily from the continent. Artichokes and Peas have arrived from Lisbon, the latter selling at from 12s. to 15s. per quart.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	2	0	to 4	0			
Apricots.....	0	0	0	0					
Cherries.....	0	0	0	0					
Chestnuts.....	14	0	20	0					
Currants, Red.....	0	0	0	0					
Black.....	0	0	0	0					
Figs.....	0	0	0	0					
Filberts.....	100	40	0	0					
Cobs.....	50	0	60	0					
Gooseberries.....	0	0	0	0					
Grapes, Hamburgs lb	7	0	12	0					
Muscats.....	8	0	14	0					
Lemons.....	100	5	0	10	0				
Melons.....	each	0	0	to 6	0				
Mulberries.....	punnet	0	0	0	0				
Nectarines.....	doz.	0	0	0	0				
Oranges.....	100	5	0	10	0				
Peaches.....	doz.	0	0	0	0				
Peas (kitchen).....	bush.	5	0	10	0				
dessert.....	doz.	3	0	6	0				
Pine Apples.....	lb.	8	0	12	0				
Plums.....	½ sieve	0	0	0	0				
Pomegranates.....	each	0	0	0	0				
Quinces.....	½ sieve	0	0	0	0				
Raspberries.....	lb.	0	0	0	0				
Walnuts.....	bush.	14	0	20	0				

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	each	0	4	to 6	0				
Asparagus.....	bundle	8	0	12	0				
Beans Broad.....	½ sieve	0	0	0	0				
Kidney.....	100	2	6	5	0				
Beet, Red.....	doz.	1	0	3	0				
Broccoli.....	bundle	2	0	3	0				
Brussels Sprouts.....	½ sieve	3	0	4	0				
Cabbage.....	doz.	1	6	3	0				
Capelous.....	100	0	0	0	0				
Carrots.....	bundle	0	7	0	10				
Cauliflower.....	doz.	2	0	6	0				
Celery.....	bundle	2	0	3	0				
Cucumbers.....	each	1	0	5	0				
Endive.....	score	2	6	3	0				
Fennel.....	bundle	0	3	0	0				
Garlic and Shallots, lb.	0	8	0	0					
Herbs.....	bundle	0	3	0	0				
Horseradish.....	bundle	2	6	4	0				
Leeks.....	bundle	0	3	to 6	0				
Lettuce.....	doz.	0	0	0	0				
Mushrooms.....	pottle	1	6	2	6				
Musht. & Cress, punnet	0	2	0	0					
Onions.....	bushel	6	0	8	0				
pickling.....	quart	0	6	0	8				
Parsley.....	½ sieve	3	6	5	8				
Parsnips.....	doz.	0	9	1	8				
Peas.....	quart	0	0	0	0				
Potatoes.....	bushel	2	6	4	0				
Radishes doz. bunches	1	0	2	0					
Rhubarb.....	bundle	0	6	1	0				
Savoy.....	doz.	2	0	4	0				
Sea-kale.....	basket	1	6	3	0				
Spinach.....	½ sieve	4	0	6	0				
Tomatoes.....	½ sieve	0	0	0	0				
Turnips.....	bundle	0	5	0	8				
Vegetable Marrows doz.	0	0	0	0					

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

ERICA HYEMALIS AND E. GRACILIS—FORCING PELARGONIUMS (*An Old Subscriber*).—When the *Ericas* have done blooming, pot them in the course of March in a compost of sandy turfy peat, draining the pots to one-third their depth, and keeping the neck of the plant slightly elevated. Be careful not to disturb the roots more than necessary, picking away the old drainage and the soil not filled with healthy roots. Give a moderate shift, large shifts are injurious. Continue the plants in the cool greenhouse, they could not have a more suitable situation. Placing *Ericas* in heat is their ruin; give them, on the contrary, all the light and air practicable. Train the shoots out by tying them with matting (but not so as to break them), to pegs in the soil. If the plants are thin of shoots, pinching out the points of these will cause the production of side-shoots, and if very bare you may cut the plants in, but a portion of young wood must be left or they may not push from the stumps. A temperature of 55° from fire heat is too warm for *Pelargoniums* at this season, for unless the plants are far advanced for bloom, the shoots will certainly be drawn and the flower-trusses small. 50°, with air, is quite warm enough until the trusses are formed, and 50° more is desirable to bring the plants into bloom. Keeping close to the glass, abundance of air, and no more heat than necessary to maintain the plants in slow yet free growth, are the essentials of forcing; but the less the plants are forced the finer will be the blooms. Your *Arum-like* plant is *Richardia (Calla) sethiopica*.

REPLANTING STANDARD ROSES (E. C.).—You may now take up the *Roses* that have been planted five years, and replant them after having renewed the soil, and applied a liberal dressing of manure. Defer pruning until the buds begin to swell freely, or a month or six weeks after planting, and prune rather close. November is the best time for pruning, but it may be done in spring, especially with the more tender sorts. It will cause them to bloom later.

PRUNING HYBRID PERPETUAL ROSES (S. Williams).—In pruning these take out the old and weak shoots, and those that cross each other, so as to form a well-shapen head. They require pruning to two eyes if the heads are as large as desired, or if increase of head be desired, to four eyes. Prune them at once.

VINE LEAVES TURNED BROWN (One in a Fir).—We are at a loss to account for the scorching of the leaves and fruit so early as the 14th of February. The temperature from fire heat must have been extremely high, and the air of the house excessively dry, and some other cause must have existed as well, to account for the complete destruction of the foliage and fruit. We think your border good, though we should have liked it better had it not been so deep, and without leaves over the drainage. Your pit is 4 feet deep with 1 foot of drainage at the bottom, and a good thickness of leaves above it. Leaves are apt to become a soap-like mass, and thus prevent water escaping freely by the drainage. In place of the leaves we would recommend you to place 6 inches more rubble on that already at the bottom of the pit, then a layer of turves, grass side downwards, and then to fill in with turfy loam from a sandy soil chopped with a spade, adding to this equal quantities of boiled half-inch bones and charcoal, so as to form one-sixth of the whole. Instead of mixing any manure with the compost, rely on top-dressings of rich compost for nourishing the Vines. Vegetable matter is apt to form a close heavy mass when thoroughly decomposed, and the Vine will not thrive in a soil containing an excess of close, heavy, vegetable or animal matter partially or wholly decomposed. As the roots are healthy, to what do you attribute the weakness of the wood? If you are satisfied it is due to the misfortune, and not to the border, by all means leave the latter alone. We see nothing wrong in it except its depth, the leaves over the drainage, and the manure mixed with the soil. Turf, manure, and bone dust being its ingredients, we do not see how it could be improved except as above. All the sorts are good for general purposes. Your best course would be to train a shoot from the bottom of the rod and cut back the old rod to that shoot after it had pushed another shoot a foot or so long. If cut out now the danger of bleeding is great, and the Vines will be weakened. The young cane will, if the roots are healthy, reach the top of the house this season, and if well ripened a crop of fruit may be had in the following year. We do not think any good would result from retaining the old rod and weak spurs upon it.

VINES SHOWING FRUIT INDIFFERENTLY (A Young Gardener).—The bunches of embryo fruit sent us were strong and long in the footstalk, the shoulders for the most part blind or defective in the flower-knobs, and the bunches inclined to curl or become tendrils. We have found such effects caused by Vines being grown in rich, deep, cold, outside borders, which have a tendency to produce gross long-jointed wood, usually imperfectly ripened. Yours, however, cannot suffer from this, the roots being in an inside border, and completely under command. You have placed a foot of manure on the inside border, and you poured cold water copiously on the manure to wash its nutritive matters into the soil. This cold-drenching a Vine-border when the Vines are but little advanced in growth is bad. A check is given every time the cold water is applied, and the rootlets form indifferently in a cold wet border. You commenced to force early—at Christmas, and the Vines were advanced for flowering by the early part of February. You brought them on slowly at first, and since they broke have kept them at 60° by night, and 70° by day from fire heat. This, combined with the drenchings of cold water, is sufficient to account for the bad condition of any Vine subjected to such treatment, especially Muscats, and these you say are the worst. Had the water used been a few degrees warmer than the mean temperature of the house, so as to bring the border into a nice moist condition, commencing to force with a temperature of 45° by night for the first fortnight, increasing it to 50° at the end of that period, in another fortnight to 55°, and in another to 60°; then we think the bunches would not have been in the condition of those sent. Throwing the house open in summer is only wise under certain circumstances, and should never be done until the wood is hard and brown, or well ripened. Keep the border moist for a short time before commencing to force, and well watered when growth commences; decrease the amount of water after the fruit changes colour, and leave it off altogether after the fruit is ripe. Bring the Vines on gradually, and do not exceed 60° by night until the leaves attain their full size. Water always with tepid water, and do not expose the Vines or throw open the house until the wood is thoroughly ripened.

GLADIOLI GROWING IN POTS (W. B.).—Gladioli may be so grown successfully. Pot them in six-inch pots, and transfer them to eight-inch ones as soon as the roots reach the sides of the pot, and again into a 10 or 12-inch size, plunging the pots in the open ground in March or April, protecting the foliage with an inverted flower-pot. Your soil being unsuitable need not prevent your planting them out, and as you want them for exhibiting, they do much better planted out than grown in pots. Take out the soil to a depth of 18 inches, and fill in with turfy loam, well reduced leaf mould, turfy peat or bog soil, and well rotted manure in equal parts, well mixed and chopped up, adding sand to make the compost moderately porous. This should be placed in the bed early, and 6 inches higher than the surrounding surface to allow for settling. Top-dress them, 1 inch or 1½ inch deep, in the last week in May and the second week in July, with rich compost whether they be in pots or planted out. During the growing season keep well watered, a thorough soaking once or twice a week being preferable to constantly wetting the surface. Syringe them on the afternoons of fine days, and after a good watering stir the surface between the plants 2 or 3 inches deep, but do not disturb the roots. We do not know a creeping plant that would suit your room.

DARLINGS, VERBENAS, CARNATIONS, and PICOTEES FOR EXHIBITION (W. B.).—*Darlings*—Bob Ridley, Lord Derby, Lord Palmerston, Cygnet, Model, Lollipop, Handforth Hero, Beauty of Hillperton, Norfolk Hero, Criterion, Carnations, and Duchess of Wellington. *Verbenas*.—Lord Clifden, Foxhunter, Thetis, Victor Emanuel, Garibaldi, Elfrida, Chieftain, Mrs. Holford, Mrs. Moore, Mrs. Woodroffe, Urban, and Fantastic. *Carnations*.—Dreadnought, William Pitt, Capt. Thomson, Mr. Almsworth, Hope, Tenby Rival, Lucia, Christopher, Sir Henry Havelock, Mayor of Nottingham, King John, and Illuminator. *Picotees*.—Lord Elcho, Flower of the Day, Rival Purple, Favourite, Favorite, Ariel, Rev. A. Matthews, Rosy Circle, John Linton, Ada Mary, Loveliness, and Margaret.

HORSE RADISH IN PEAR-BORDER—CROPPING VINE-BORDER WITH ONIONS (G. Randall).—You will best get rid of the Horseradish by digging or forking out the roots, persisting in this as frequently as the shoots come up. Care will be necessary not to injure the roots of the Pear trees. There is no wholesale method of destroying the Horseradish except by agents that would kill the roots of the trees as well. Onions on a Vine-border are bad, they would impoverish the soil, and so would any crop.

SOWING MACHINES (R. M. C.).—They all work well, and we cannot recommend one maker in preference to others. Do not have a large one if

FOWLS' DUXE (Guernsey Blue).—Make of it liquid manure by putting a peck to forty gallons of water. Apply the liquid once or twice a-week between the rows of drilled Onions, or to any other of your kitchen garden crops.

BROCCOLIS FROM NOVEMBER TO FEBRUARY (M. C.).—The Walcheren is the best autumn Broccoli, coming in in October, and lasting with protection up to Christmas. Grange's Autumn White, and Hammond's White Case, are good useful sorts for late autumn use. Snow's Winter White is probably the only Broccoli that can be depended on (and that not always) for furnishing heads in January and February. Early White Malta is a good early kind, and Hopwood's Early White sometimes comes in in February. The seed should be sown rather thinly in the first week in April in good ground, and when the young plants are large enough they should be pricked out, finally planting in well-manured ground, 2 feet apart, and 3 feet from row to row, taking them up with balls, and keeping them well watered until established, and afterwards in a dry weather, others will they head prematurely, especially the Cape varieties. Keep them well earthed-up, and in autumn bank them quite up to the leaves with soil, mulching between the rows with litter, and a little spread over the heads in frosty nights will protect them from injury. The Walcheren should be taken up when the heads are about half their full size, and the plants laid in close together in an open shed, or where they can be covered with straw during severe frosts. We had fine, large, close heads up to Christmas last year.

PEAS FOR SEPTEMBER AND OCTOBER (Idem).—A sowing of British Queen made in the last week in May, will usually produce Peas for use in September. We make a sowing about the middle of May, another ten days later of British Queen, Hairs' Dwarf Mammoth, and Ne Plus Ultra, and invariably have Peas from these sowings in September and October, and we have gathered from them on the 20th of November. Sow these three kinds on ground prepared as for planting Celery, at three different times during May, beginning in the first week, and sowing at intervals of ten days, and you will have an abundant crop of late Peas of the finest flavour. If your soil is light sow early in June a breadth of an early sort, as Advance, Early Green Marrow, and Eclipse. We make it a practice to sow these three, commencing on the 15th of June, and with three sowings at ten days interval, we have the middle of July nearly.

VINES DISBUDDING (An Amateur).—Wait until the shoots have grown enough to enable you to distinguish which will and which will not have a bunch of fruit, and when this is beyond doubt rub off that showing no fruit, or if both show fruit take away the smallest, giving preference to the shoot nearest the rod. You must leave one shoot to each spur, whether it show fruit or not, rubbing off all others. One bunch on a spur is ample for a good crop, more taxing the strength of the Vine too much. Stop them at the joint or leaf above the fruit, and all laterals at the first joint. The Moss is *Sesquigelia denticulata*, and the other *Cytisus pauciflorus*, we think, but the flower was crushed.

PROPAGATING QUINCE STOCKS—PARADISE STOCKS (—).—Quince stocks may be obtained by layers, and sowing the pipe, now being a good time for doing both, but the earlier the better. Paradise stocks are propagated by sowing Apple pipe now. Coburn scandens may be propagated by cuttings, layers, and seed, now being the time. Cuttings of *Garranis* inserted now would for the most part strike.

PLANTING CONIFERÆ ON MOUNDS (An Irish Lady).—Nordmann's Silver Fir, and Picea Nordmanniana are identical. The benefit derived from planting the Pine and Fir tribe on mounds of earth is great, the chief benefit being that the roots run near the surface, and unless the collar be elevated a Conifer seldom thrives. By all means plant them on mounds with a flattened top to retain water. On good ground they do not need manure, but a little rich fresh mould placed around the roots will assist their taking hold and becoming established.

FRUIT MANUAL (R. Coles).—A new edition is preparing, and will be published during the approaching spring.

REGISTRY OFFICE (A. Z.).—We cannot answer questions which are not within our province. Consult a London Directory.

SALTING ASPARAGUS-BEDS (A Subscriber of Many Years).—You may apply salt now, and throughout the time of the Asparagus growing—that is, until the end of September. We have applied the salt two ways—sprinkling it on the surface once a-month at the rate of an ounce to a square yard, and dissolving it four ounces in each gallon of house sewage. This we apply once a-week. The Asparagus is a native of the sea-shore.

GARDEN PLAN (E. A. L.).—We purpose having your praiseworthy plan engraved and inserted with a brief comment next week.

STEPHANOTIS FLORIBUNDA (N. S.).—There was no fungus spawn in the sample of soil you sent. It was full of the rootlets of some plant, probably of the *Stephanotis*. The cause of its leaves shrivelling was either deficiency of temperature or deficiency of food; we think the latter was the deficiency. The sample of soil was mere fiery peat. We should remove as much of it as we could without disturbing the roots, and replace by a mixture of equal quantities of peat and leaf mould, with a little sand.

TRADESCANTIA SEBRINA—LAPAGERIA ROSEA (Benlah).—The withered morcel of a specimen resembles the *Tradescantia sebrina*, or what is sometimes called *Cyanotis vittata*, a creeping, trailing plant with purplish and whitish leaves. It thrives well in a cool stove and warm greenhouse, and makes a good plant for a basket suspended in a window. The *Lapageria* likes a greenhouse not below 45°, plenty of surface room, good peat and loam, abundance of drainage, and plenty of water, but stagnant moisture is its ruin.

ROLLERS FOR OUTSIDE SHADES (J. McI.).—There is nothing for this purpose so light as wood. The rollers may be made from 50 and more feet in length if drawn up by each end and the middle. In such cases it is best where the pulley ropes pass underneath the roller—that is, fastened at back, come down the glass, and go back above the blind to a pulley at the top, all the ropes being joined to form one in the centre, so that one man may pull all the strings at once. A blind with a wheel or place for a rope nearly at one end, should not be much more than 20 feet in length. We have seen galvanised iron rollers, stout, but hollow inside, and about 1½ inch in diameter, do very well, but if the roller is heavy, and one pulley string has too much to do, they too will warp. The best remedy is to have plenty of pulley strings, and supposing there are three, the two end ones may be brought along the top of the house to the middle, and one man can then pull all the

WAXMAN CASE (C. E. S.).—We do not know who makes these now. Mr. West has left Surbiton.

LOWSPERKUM MAGNIFICUM CULTURE (—).—Turfy sandy loam two-thirds, leaf mould one-third, with a free admixture of sand. Three plants will sooner fill a basket, but one would do better in so small a basket, stopping the shoots to make it branch. It will grow to a height of 20 feet, but is often seen 6 feet high. Seedlings now in the second leaf may flower this season with liberal treatment. Pot them singly in small pots; keep in a frame on a mild hotbed until the pots are filled with roots, then transfer to a greenhouse, after hardening off, and in the first week of June plant out some of them against trellises in sheltered parts of the open garden, taking out the points of the shoots when they have made six leaves beyond the seed leaves, and stopping them again at 18 inches high if they do not produce so many shoots as required. Train the shoots regularly, and this is all they require in the way of pruning. Any that are wanted to train on trellises or wires in the greenhouse, should be potted as soon after as the pots become filled with roots, or potted into a 9 or 12-inch pot at once, just as large or small plants are desired. Such plants require the same treatment as to stopping the shoots where more are wanted, or when they are inclined to become leggy. Distribute the shoots regularly, thin them if crowded, and keep near the glass.

IPOMEA HYBRIDA MARGINATA CULTURE (—).—Sow in a compost of light turfy loam, with about one-third of leaf mould added. Place in a hotbed frame, and when the plants are in the rough leaf harden off, and keep in a greenhouse until the last week in May, then plant them in the garden, giving them a tall stake to twine round, or, if desired, put three in a 12-inch pot, and train to the rafters of the greenhouse.

AMARANTHUS MELANOLICUS CULTURE (—).—Sow early this month, in the soil recommended for nearly all annuals—light loam and leaf mould, in the proportion of two parts of the former to one of the latter. Place in a mild hotbed, and, when the plants are large enough to handle, pot them off singly in 60-pots, or three round the sides of a 48. Keep in the frame until the plants have made roots to the sides of the pots, when more air may be given, and the plants hardened off. As large plants are wanted, pot in a six larger, and grow on in the frame or a vinery at work until the middle of May; then gradually admit more air, so as to have them hardened off by the beginning of June.

FINE PICEA PINAPO.—In your Number of Feb. 28th "A SUBSCRIBER" speaks of a specimen of the Picea pinapo at Luton, being 42 feet in circumference and 14 feet high. I beg to say I have one 44 feet round and 19 feet high, very healthy and well grown.—F. W. C., *Woodlands, Red Hill.*

BOOKS (Wigan).—For a field naturalists' club, of "books either new or old," we recommend Smith's "English Flora," Hooker & Arnott's "British Flora," Hogg's "Vegetable Kingdom," "The Wild Flowers of Great Britain," and Seeman's "Journal of Botany." The two last-named are monthly publications.

WALL OR PALING FOR FRUIT TREES (W. Turner).—Build a wall by all means, having it 7 feet high, and glaze the front, as represented in our columns to day. You may then grow Peaches, Nectarines, Apricots, and Black Hamburg Grapes in defiance of any Liverpool gales.

CINERARIA SIEBINGII (J. Coll).—A showy border flower, but will not compete, as a florists' flower, with many of the same colour.

WALTONIAN CASE (T. A. S.).—Mr. West, the maker, is gone, and we know of no one who now makes it. We employ the Bijou plant case, made by Mr. Stocks, cabinet maker, &c., Archer Street, Notting Hill, London.

DWARF ROSES IN A BED (Eoschem).—We have no doubt that Général Jacqueminot will make a very good bed, and the plants may either be pegged down or allowed to grow bush fashion. If the latter, cut out the most robust and coarse shoots as they are produced, and the bed may be made to assume a tolerably even appearance. We have this and other Roses, grown on their own roots, in beds, and prefer such plants to those on Manetti stocks, when the kinds will succeed in this way. Baronne Prevost, Général Jacqueminot, Jules Margottin, and others do remarkably well.

OAK TREES NOT THRIVING (A Constant Subscriber).—We fear there is something radically wrong with your Oak trees, which you say are growing in a field on a dry clayey bottom, so very dry that, after a dry season, the soil is so dry and hard that it is late in autumn before it becomes wetted through. If the trees are not very old they might be benefited by the surface being partially removed, and light soil, containing more sand or gravel in its texture, substituted for it. We hardly recommend watering, as nature generally supplies moisture enough for all kinds of trees, excepting those newly planted, which yours are not.

APPLE TREES NOT PROSPERING (J. C.).—There must be something the matter with the roots, or your trees, planted three years, ought to have grown some considerable size ere this. We hardly know how to advise you, in the absence of more information about the situation and kind of soil. Ribston Pippins are not by any means the best thriving of Apples, but Nonsuch ought to do well. Cutting back will not affect their general health much, and will not certainly improve their stunted growth, which either arises from the soil or climate, or perhaps both. Write again, stating your locality, and other particulars.

NAMES OF INDIAN AZALEAS (June).—The colour was too faded before we saw the blooms to give us a chance of identifying them; but had they been fresh the varieties are too numerous to justify naming without seeing the plants.

NAMES OF PLANTS (M. C.).—1, *Asplenium bulbiferum*; 2, *Asplenium flaccidum*—two species which are closely connected by intermediate forms. 3, *Pteris longifolia*. (D. B.).—1, *Asplenium cicutarium*; 2, *Blechnum occidentale*; 3, *Pteris tremula*. (John Bryan).—1, *Onychium lucidum*; 2, *Adiantum capillus-Veneris*. The insect is the common Mite (*Acarus*), and it feeds only on decayed vegetables. (B. C.).—It is *Lycopodium clavatum*, or Club Moss, sometimes called Wolf's Claw. It belongs to the Natural Order Cryptogamia Lycopodiaceae. (C. P.).—Your Mosses are—1 and 3, *Hypnum rutabulum*; 2, *Hypnum complanatum*, and, mixed with it, *H. curvatum*; 4, *Hypnum praelongum* and *H. denticulatum*; 5, *Bryum ligulatum*; 6, *Polytrichum undulatum*; 7, *Bryum hornum* or *B. stellare*; 8, *Tortula subulata*; 9, this has no fruit, but it is either *Dicranum bryoides* or *D. taxifolium*, probably the latter; 10, *Jungermannia asplenoides* var. minor, mixed with *Hypnum trichomanoides*.

METEOROLOGICAL OBSERVATIONS in the suburbs of London for the week ending March 4th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun. 26.....	29.947	29.838	47	29	42	41	S. W.	.16	Rain.
Mon. 27.....	30.121	29.891	52	39	43	41½	S.	.00	Fine; overcast at night.
Tues. 28.....	29.524	29.449	53	37	44	42	S. W.	.01	Densely clouded; fine; overcast.
Wed. 1.....	29.696	29.535	51	37	44	43	W.	.10	Cloudy; showery; overcast.
Thurs. 2.....	29.941	29.671	50	27	44	43	W.	.04	Rain; boisterous; fine.
Fri. 3.....	30.249	30.207	50	21	43½	43	N. W.	.00	Uniformly overcast; dusky clouds; frost at night.
Sat. 4.....	30.235	29.695	47	27	43	43½	S. W.	.10	Hoar frost; heavy clouds; rain at night; boisterous.
Mean	29.959	29.754	50.00	31.00	43.86	42.29	.....	0.41	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY-KEEPING FROM A COMMERCIAL POINT OF VIEW.

THIS subject is one of real importance, and should be fairly and good-humouredly discussed. The promoter should be prepared to answer every reasonable objection, and "C. S. J." has stated nothing unreasonable. I never heard of the profit of a large number of hens averaging more than 5s. per annum per hen, and surely it is most ample, considering the commercial value of the animal to be about 2s. 6d. When you come to reckon your hens by thousands, if you get from each 120 eggs in a year you will have no cause to complain. Their wholesale value in summer I cannot determine, though I have never bought a new-laid egg in London for less than 1½d.; but we all know that retailers look for enormous profits, so I incline to the opinion of "C. S. J.," that 5s. per 100 would be about the summer wholesale price. As to the value of chickens at six months old, it depends on the season, supply, demand, and quality;

but I cannot conceive how a bird is to be fed and made so fat at such an age for 9d.

If Mr. Geyelin wants to form a company to carry out such an undertaking he should show how it is to be done. His unsupported statement is fairly liable to be questioned, but facts and figures carry conviction. A mere Dr. and Cr. calculation on paper will not do, we must be governed by the markets. It is my own opinion that, taken as a whole, the profits estimated by "C. S. J." are considerably above what would be realised in practice, yet he allows only £2158: whereas Mr. Geyelin's nett profit is £7326, both on a capital of £3000. To be really safe all such calculations should be based on a minimum, while I fear Mr. Geyelin has taken a maximum scale. Some minds are naturally very sanguine, and can view things only in a favourable light. This may lead to great mental happiness, but monetary disturbance. It may be very fairly questioned if such an undertaking could be properly managed by a company, for its success must entirely depend on individual energy and attention. To earn a dividend for the shareholders the directors should do as the higglers do in Sussex—they should devote all their time to the business. I incline to think a partnership, where all the partners would divide the work fairly between them—

selves, would produce a far better result than leaving everything to paid servants, whose first care is ordinarily for themselves.

I know not how it is, but artificial incubation does not seem to be permanently successful amongst us. Cantelo's system made a prodigious noise for a time, but who ever hears of it now? His "Hydro-incubator" was exhibited in every stage of operation at a charge of 1s. He then established a small "Poultry Farm" at Chiswick, but after all he could do no good with it. Now with every kind feeling for Mr. Geyelin, and with the heartiest wishes that the utmost success may attend his speculation, what proof, I would ask, have we that his system of artificial incubation is in any respect superior, commercially, to that of Mr. Cantelo? It is obvious the success of the Company must entirely depend on the perfect success of his incubator; and I need not say to establish the success of anything now-a-days is a work of time, trial, patience, politeness, and perseverance.

An inventor must bear in mind that to object is not to condemn. An inventor must be prepared for severe criticism, and so long as this is fair and reasonable so much the better for the inventor, if his invention safely passes the scrutiny. This is the royal road to popular favour, which makes his fortune.—NEMO.

My estimate of revenue and expenses is based on facts ascertained by actual experiments, and I maintain its correctness. If your correspondent, "C. S. J.," previous to proclaiming himself the public Mentor, had favoured your readers with the results of his own experiments in lieu of publishing surmises based exclusively on his personal opinion, they would, no doubt, have been received with all due deference.

My system of feeding chickens is far cheaper than the present mode, and is calculated to develop the size and bones in the shortest space of time, and not flesh and fat, which can soon be done when the frame is ready to receive it.

The market commission is 5 per cent. on dead stock, and not 10 per cent., and a chicken six months old fattened with barley and Indian-meal is more likely to fetch 3s. 6d. than 2s. 6d. The expenses of one home being divided among six hens and one cock are necessarily heavier per head than when divided among twelve or eighteen laying hens, or from twenty-four to thirty chickens. The choice birds, I am informed by many, ought to produce over £1000 from among 50,000 chickens per annum.

I am pleased to perceive the interest "C. S. J." takes in this subject, and I trust that the Company now forming will have the advantage of his co-operation, with a view to solve the problem "OSTEND RABBIT" so forcibly puts in his masterly letter. Is there any valid reason why England should not supply her own wants in the shape of eggs, poultry, and rabbits?—GEO. K. GEYELIN, C.E.

HOME SUPPLY OF POULTRY AND EGGS.

How long does it take for a question to go through all its phases, to settle down as a recognised fact before the public, with the certainty that it will only be disturbed now and then, at stated periods, to be ventilated according to some, or to have the accumulated dust of years rubbed off according to others? Fourteen years ago, the public one day recognised the fact, that poultry was a pursuit, that it was deserving of encouragement, and then some thought it was a mania. The pursuit of the trade of a "poulter" is not one of yesterday. Its Guild, or Company, ranks among the ancient ones of the City of London. It has in its day lent money to the Sovereign of the United Kingdom. It still exists, and has its chartered rights; and its bequests and benefactions go back to the sixteenth century. It seems now as if its claim to a share in providing food for the vast populations in the metropolis and large towns were about to be properly considered. We are no longer self-supporting in the way of food. Many of us can recollect in one of the old Arctian-Gallican songs, it was said—

"They want to get our flesh and blood,
Our beef and beer."

Things are altered—we get a good quantity of theirs;

and half the continent is laid under contribution to supply our carnivorous propensities. Good sound men of figures prove that the supply of food decreases, others point to an increasing population, and the increasing price of meat. The leading journal of the world but lately called attention to the figures of our imports in the way of food, and was obliged to pause at one item. "A million of eggs imported for every working day in the year;" "Turkeys by thousands; Rabbits by the ton. These are helps to the food necessary to feed the metropolitan millions; but the question naturally suggests itself, Do we do all in our power to provide more of these things at home?"

The egg trade with Scotland is becoming a very large one. We import eggs from France, Holland, Belgium, Switzerland, and part of Italy. Cannot we do something towards providing ourselves with these valuable luxuries, and thereby not only increase the number, but probably decrease the price of them? We have in our favour, and, consequently, to our profit, all the expense of foreign agents, of travelling, freight, carriage, and dues. With eggs produced at home nearly all this would be avoided. If those who can keep poultry will not keep them, then those who have the inclination without the convenience, must endeavour by association to find the means of carrying out their theories and ideas on the subject.

We believe we are correct in stating, that plans are now a-foot, which will in all probability result in calling public attention to the subject, and in giving the question a fair trial on a large scale.

THE POULTRY CLUB.

YOUR correspondent "A TIMID EXHIBITOR" says, in his first letter, that one of the main objects for which the Poultry Club has been formed is the discouragement of dealers as judges at any show. Even if the Club have acted up to this rule, they have fallen into a worse error than if they had completely ignored it—viz., they have left the appointment of judges in the hands of dealers, who are also amongst the largest exhibitors, and whose interest it is to win prizes, not merely for the sake of the prize itself, but as a means of raising the value of the birds they have for sale.

In my opinion any person is a dealer who breeds or purchases poultry, and afterwards disposes of it for a pecuniary consideration. There may be two kinds—the amateur dealer who, whilst he keeps poultry for amusement, endeavours by selling birds at a profit to make the receipts cover the expenditure. Amongst this class I should place several of the Club's stewards, and also some of the persons mentioned by Mr. Boyle. The other class of dealers make it part of their trade to buy and sell poultry, as for instance Messrs. Baily, Yardley, Hutton, Beldon, &c. I do not say that all the Club's stewards are dealers, but there are a few whom I can point out who deal in fancy poultry to a large extent. Their influence with the judges appointed by themselves must obviously be great. This circumstance no doubt accounts in some degree for a fact that must have been noticed by many of your readers—viz., birds purchased of this class of people generally leave their winning properties behind them, although remarkably successful when exhibited by the dealer.

I have been surprised in looking over the prize-lists of recent shows to see how very successful these gentlemen have been lately. One of them, an extensive dealer, according to his own advertisement has taken 537 prizes, including eleven silver cups, since January, 1864. I am not the only person who has made remarks about the success which appears to cling to members of the Club when their own judges are officiating.

Mr. Ranwell in his letter about the Islington Show remarks "that he thinks the rules of the Club have been compiled by the members solely with an idea of pleasing their own fancies." If such were not the case he thinks the prizes would not have been so thickly distributed amongst the members as they were.

I advise "A TIMID EXHIBITOR" not to join the Club until some alteration is made in the management; and then it would be better if the Club could organize itself to supply

its opinion on the different qualifications which confer a prize pen, and leave exhibitors and judges to choose or they will follow its advice or no, and not to wish to let judges for every show, but leave that to the comers, who are much better able to do so.

admire the way in which the Hon. Sec. endeavours to ; any public discussion on the management. Still I have thought that, as the promoters desire that the and or fall on its own merits, they would be only too to discuss them if it had any merits to stand on. Is use it has none that the Stewards are afraid? Cerne of the principal objects is a failure. Perhaps all ers are the same.

nclusion, I think it would be better to have dealers e not exhibitors as judges than to allow dealers who ibitors to choose them, for certainly the dealers who have the most interest in who gets the prizes. If sent system of judging is continued I venture to that it will soon disgust all honest exhibitors with suit, and thus prove a check on a very entertaining eful fancy, as it has already done to one who has to exhibit, and become merely—A LOOKER-ON.

ng noticed the letter of "A TIMID EXHIBITOR" in urnal of the 21st ult., inquiring "who claimed the ze pen of Game Bantams at the late Manchester nd resold them there?" I beg to inform him that the : claimed on the suggestion of Mr. Douglas, but not the opening of the Show and the admission of the in fact, several other pens were claimed before it ; it Mr. Douglas had nothing whatever to do with the f the pen.

take your correspondent's definition of a dealer, e all come under that class. He wishes to prove Mr. : a dealer, because some two years ago upon the Hon. /ernon's relinquishing exhibiting, he sold that gentle- lock of poultry, and has since adjudicated upon some it with what result the instance named in "A TIMID oe's" first effusion only proved Mr. Douglas's in- as a judge, for upon the occasion alluded to (Leeds), several birds formerly the property of Mr. Vernon mpeting, not one obtained even a commendation. I strongly advise your correspondent to write openly, ach his name to any charge he has to make against ; but I fear had he done so in this instance, he ot have been found the timid exhibitor he professes HE THAT RE-SOLD THE MANCHESTER FIRST-PRIZE GAME BANTAMS.

an amateur poultry-breeder, and I suppose that I o be called a *dealer*, because during the past year I eived £40 by the sale of birds and eggs. This is an n some persons might not be willing to make. In asant book, "Our Farm of Four Acres," is the fol- -"Our fruit was as plentiful as our vegetables; in- ; might have sold the surplus for some pounds; but found that to do so was to lose caste in the neighd." Oh, cold shade of shabby gentility! perhaps y be the case in mine. I neither know nor care. My tter is sometimes stamped with the name of a baronet, thers with that of a wealthy squire. I neither like r their butter the less for it. Until the beginning ear I did not make any attempt at sales; in fact, at time I had very few birds, and had only twice ex-

Hear this, ye "timid exhibitors," and those whose about unprofitable poultry, and the unfairness of ave from time to time appeared in these pages. certain circumstances which occurred, I was at one posed to look unfavourably on the Poultry Club, al- I advocated the principle of the association. I have en reasons which have induced me to become a . Two things, however, have not pleased me since ected. The first was that sweeping condemnation of ing at Birmingham last year, where I exhibited, but successful. The second is the offensive prominence y the Club to the fact, that dealers are to be ex- rom public judging at the shows.

ld not be at all afraid to trust myself in the hands than one dealer that I know, whether he acted as

a salesman or a judge; but at the same time I can see good reasons why dealers should be excluded.

Except that an ugly imputation seems to be implied, I think that few dealers can object to the principle of judging laid down by the Poultry Club; but if the rule exists, and I am not inclined to oppose it, the matter should be fairly carried out, and all persons should be excluded from public judging who are either dealers by occupation, or who, as amateurs, directly or indirectly sell poultry.

In cases of dishonesty, I am afraid that exhibitors are frequently as much to blame as judges, and in dealing I do not think one is by any means safe in the hands of amateurs, who frequently disappoint by ignorance as well as by design.

There is a suggestion in a contemporary, which is worthy of repetition, and which would meet the difficulty of judging half way. It is proposed there that the Poultry Club should adopt the plan followed at Manchester, where the pens are numbered in the judge's book according to their order of entry, and not according to the position of the various classes in the catalogue, so that no communication of numbers can take place between exhibitors and judges.

Judges should in all cases be provided with books that have neither the names of the owners of the birds nor the numbers in the catalogue. The preparation of these 'in manuscript would be simple and inexpensive. As I dislike anonymous communications, I will give my name, which, however, will be scarcely known, as I have seldom exhibited, and as I have conducted my dealings in the first instance in the name of my man.—GEORGE MANNING, *Member of the Poultry Club.*

MORE CLASSES AT POULTRY SHOWS.

At this season, there is by common consent a lull in the poultry world. Shows are over, secretaries are resting after their labours, prize birds are attending to their domestic duties, nursing, perhaps, the infants whose full-grown proportions will, next winter, be the admiration of Belle Vue, and Bingley Hall. This, then, is the time for managers to review the past, and deduce useful hints for the construction of future schedules. Now, too, is the time for a humble exhibitor to express wishes and feelings which he believes are in unison with those of others. Not long ago, a worthy beneficed clergyman was asked, "What are the great wants of our day?" His reply was a ready one, "Cooks and curates." Possibly he was suffering from the effects of a half-boiled Potato, or an ill-cooked chop. Perhaps he felt "Monday-ish" after a Sunday of overwork. Be that as it may, we, too, have an answer to the question. "What is the great want of poultry exhibitors." In a word, "More classes."

I need hardly explain why this is. At all but the leading shows the classes are so few that several varieties compete together, one of these often sweeps off the prizes *en masse*, and the other varieties are ignored.

Exhibitors will know the unsatisfactory feelings that arise from finding their birds beaten by another breed or variety. To see your noble White Cochin, over whose snow-white plumage and fine proportions you have chuckled many a time, "hiding his diminished head" from the victorious Buffs; to find your Light Brahma with his spreading black cock's tail thrown into strong relief by his white body, and with fluffy thighs bulging out like a Dutchman's inexpressibles; yes, to find even such charms as these unavailing against his dark rivals; to discover, alas, too late, that White Dorkings have little chance against the coloured birds—surely this is enough to sour the milk of human kindness in the breast of the exhibitor, and, then, as a result, what happens? He goes home, "a sadder and a wiser man," and his conclusion may be embodied in the remark of a certain Game breeder. "I am not such a fool as to send my Duckwing cock to —. There is only one Game class, and the Reds will take the prizes." Let me then call upon managers to give us *more* classes, even if the prize money in each class is reduced. Let the cake be cut into more, though smaller slices, and then fewer will be sent empty away; for, after all, it is not the value of the prize, but the honour of it, which we exhibitors are seeking.

In conclusion, let me apply to poultry prizes the same wise policy suggested, I think, in the "Rejected Addresses," in

the preface to which it is pointed out that the difficulty and unpopularity of giving a prize for a poem, arises from the fact, that each poet has at least six friends, all of whom think his the best of all possible poems, and that no prudent man will encounter such a host of enemies. Let our Show Committees multiply their classes, and the number of discontented folk will be lessened in proportion. I cannot but hope that the "wise Persian," and our kindly friend, if I may call him so, the "WILTSHIRE RECTOR," will add their weighty approval to the humble suggestion of—**BRABRA POOTRA.**

P.S.—Since writing the above I have read with much pleasure the letter of "Y.B.A.Z." in your last issue; it is not the first occasion upon which I have been fortunate enough to agree with his views upon poultry matters; and in every one of his suggestions last week I most cordially concur.

THE "WILTSHIRE RECTOR" AND FANTAIL PIGEONS.

A GREAT statesman and an almost equally great author, is said, some years since, to have met with an accident in a remote part of the kingdom while travelling. He was supposed to be grievously injured—report said he was killed; he was aware of this report, and was in no haste to contradict it, but quietly waited for what he knew would follow—the history of his life and comments on his character in the newspapers. Sure enough out came the many-columned biographies, out came the leaders thereon; and he read them, and so was able to gather what his contemporaries thought of him they supposed to be dead: indeed, he had the double advantage of life and death. Now, the "WILTSHIRE RECTOR" had no need to meet with an accident, no need for a report of his death—his bones were unbroken, his flesh unbruised; but still for all that he, in THE JOURNAL OF HORTICULTURE of February 21, had the pleasure to read an account of himself, nothing sad having happened, written by "B." Ah! who is "B.?" What is he like, this busy "B.?" What is he like? Where lives he? He knows one Wiltshire clergyman, that's certain. Perhaps he lives in Wilts, or wanders hovering from county to county. I will tell "B." that the breakfast at Hilltop Rectory was even more than usually hilarious when his description of "WILTSHIRE RECTOR" was read on that Wednesday morning. Well, the description of the "WILTSHIRE RECTOR" is partly right and partly wrong. I speak only of his outer man; of the rest I am not the proper person to speak. There are many much better men and some worse men, I fear, in the world than "WILTSHIRE RECTOR." I will not say in what respects the description of face, figure, and feature is incorrect, or I may this spring be met in the Strand by "B." or his friend, and be recognised. This much I will say, that the "WILTSHIRE RECTOR" is very pleased to make friends either in person or on paper. This is too cold a world to refuse one the very least bit of kindness. I want to see good "Y. B. A. Z.;" and I shall be happy to visit any other good poultry-yard or Pigeon-loft if not too far off. Already I number several pleasant acquaintances made through the Journal.

But I have something else to write about besides "WILTSHIRE RECTOR." I have long held an opinion, strengthened by recent inspections, about Fantail Pigeons, concerning which I should like the judgment of any other Pigeon-fancier, especially that of Mr. Brent. First I would say, I am anxious that we should in all cases decide if possible as to what are or are not pure and distinct races. The Barb is evidently one, and a very beautiful one. The Carrier is another, but not so the Horseman and Dragoon. The White Fantail is, I think, a pure race, and the only pure Fantail; all coloured ones I believe to arise from crosses, more or less remote, with the Runt. My reasons are these: The difference in the eye principally, in the head partially. The White Fantail's eye is very peculiar. Says Delamer, "The iris of the Fantail is of a deep hazel; the pupil black, which gives to the eye a fulness of expression quite different to what is seen in most other birds. Col. Sykes, in the 'Transactions of the Zoological Society,' makes the colour of the eye an important guide in determining the affinities or dissimilarities of species, believing it to manifest occasionally

even generic distinctions." Now, the eye in the coloured Fantails I have seen is very different—sometimes gravel, at other times orange, and not set in the head in the same somewhat pig-eyed way. Again: I think the coloured Fantail is crossed with the Runt rather than any other Pigeon, because the Runt has the throat-tremble, "the shake," and some of them carry their tails much turned up; also coloured Fantails are of Runtish colour and shape, and have usually less ample tails—that is, in the specimens I have seen, and are larger, much of the delicacy of the neck being gone with the snake-like form of the head. I invite the opinions of experienced fanciers on this subject.—**WILTSHIRE RECTOR.**

KEEPING EGGS FOR HATCHING.

"W. M." suspends a large wooden tray half filled with bran to the kitchen ceiling, about 3 yards from the fire. The eggs are half covered with the bran, and small end downwards. There is a pretty good current of air to the eggs frequently, and the situation is dry and warm.

[There is no objection to your plan, except that the eggs may be too warm; but half the trouble might be saved. As there is now no fear of frost the eggs are perfectly safe in any outhouse, and in any box or basket, and there is no danger of their failing to hatch.]

PARROT MANAGEMENT.

ELEVEN years ago I bought at my door a poor shabby Parrot, dying of cold, influenza, and cholera. I cured him with chicken broth, vermicelli, and mace in it, of which he drank greedily, and weak tea, with sugar and milk of course. Next day he was all but well. He is a splendid specimen of the King Parrot of Buenos Ayres, and has travelled half over Europe with me. He has never been ill but once, from extreme cold at Thun, where I could have no fire for him last summer. His food is regular—tea and sop, with a little bread and butter on the top, morning and afternoon, always fresh and warm, sugar and milk of course. At one o'clock he has any baked pudding that may be going (rice, or bread), or light dumplings, which he likes, and now and then some fried fish, which all Brazilian Parrots, I have learnt, are fond of. The staple of his diet consists of berries of the common thorn, which I have collected by bushels for his winter consumption. These yield to walnuts, and these to young larch and fir cones. No Parrot can be healthy without plenty of wood—bits of oak, elm, hazle, beech, Spanish chestnut, larch, and cherry. Black currant is an especial treat when the buds are springing. The wood is especially necessary both as food and for digestion; and a Parrot is called mischievous for nibbling chairs by those who do not understand this. Plenty of tepid water to drink, and gravel stones sometimes, are also necessary. My bird has the warmest place by the fire; but no bird should be, as I have seen them, pitilessly exposed in a cage, without power of relief or escape, to a blazing fire, or to sun, cold or rain on a balcony. They cannot endure the glare in their eyes. They should be very warmly wrapped up at night. Mine has many folds of serge and baize round him, and he only inhabits his cage at night. By day he can stretch his legs and walk where he likes, sometimes flying in my room. These affectionate creatures deserve better treatment than they often receive. I have also two very handsome Dominican Cardinals, and during seven years they have never been ill. With these the grand secret is to give them plenty of fresh water daily, seeds, both canary and hemp, and a piece of fresh turf at least twice a-week. They will extract every insect diligently, and it amuses and prevents them picking their legs, as they are apt to do if neglected. When turf cannot be had they should have cold beef or mutton very finely minced, cooked meat, or hard-boiled egg, once or twice a-week. As they generally die within a year in confinement, I mention these facts, which I had from the gentleman who kindly brought the birds for me from Brazil.—**ORNITHOLOGIST.**

P.S.—Tardy moulting in birds is like difficult teething with children, and requires relief. A Parrot often suffering from inability to shed the feathers on the back of his neck where the bill or claw cannot reach, these should be very gently pulled between the finger and thumb; while playing

with the bird it is easily done, and he experiences immense relief, for these spurious processes are very painful, but the greatest care and tenderness must be adopted, as the quills are very evidently tender and painful to the touch, and irritate the adjacent skin; so of the cheeks and breast, which I shell always, and below the beak.

REMOVING OLD COMBS.

WHICH is the best and simplest way of taking out the combs, which are four years old and quite black, from one of Taylor's amateur's hives? Shall I take the old black empty combs out and leave the new ones in, and how shall I get the bees out, and where drive them to while I take out the combs? I should much like to know if Mr. Lowe dare make such experiments with common straw hives, and if he does not protect himself in some way against their sting. He states in his last chapter that he has great faith in operating on their fears. I should very much like to know when bees are in that state, for they often put me into it?—A YOUNG BEE-KEEPER.

[The usual mode of operating on the fears of bees in common hives, is by what is called "driving," and this was, we believe, what Mr. Lowe refers to in page 123. You will find a full description of the process from the pen of Mr. Woodbury, in p. 423 of our fifth volume. In your case, however, having to deal with a bar-hive, driving is not necessary, and a different system of tactics should be resorted to, selecting the middle of a fine day for the operation. You will require a bee-dress and stout gloves, a strong spatula or palette-knife, a bent knife, some sweetened water, an empty bee-box, and a lighted fumigator or cigar, or some smouldering rags firmly rolled together. Having withdrawn the screws which secure the crown-board, and donned both bee-dress and gloves, pass the spatula under it all round until it becomes loosened, then slightly raise it at the back, and blow under it two or three good whiffs of smoke, after which it should remain closed a minute or two whilst the bees are filling themselves with honey. Next, lift it boldly off, and stand it safely on one side so as not to crush any bees which may adhere to it, and liberally sprinkle the interstices between the exposed bars with sweetened water. Should the bees take this in good part without commencing an attack, the operation may be at once proceeded with; but if their pugnacity be not quite subdued, a second subsidy of sweets should be accorded them, and the crown-board replaced for a few minutes to give time for their acceptance of the proffered bribe. All these manipulations are based upon the fact, that when bees are alarmed they immediately fill themselves with honey, or such other sweets as may be at hand, and that if we can induce them to do this they become as inoffensive as house flies. No provocation short of absolute crushing will induce them to sting. Having proceeded thus far, the next step will be to sever the end attachments of one of the side-combs, which must then be lifted out and stood in the empty box placed ready to receive it. Loosen the next comb in like manner, and having examined it put it in the place in the hive previously occupied by the side-comb. Continue this process until you have examined and shifted every comb, and made up your mind which two (if any), it will be desirable to remove. There will be little brood at this season, and none of it must be sacrificed, neither should the stock be deprived of more than two combs. Having selected these, the bees should be brushed off them into the hive with a feather, and the combs at once conveyed in-doors. The remaining combs must be brought together so as to leave the vacancy on one side, and the crown-board replaced. If there are more worn-out combs to be got rid of, the operation may be repeated next spring.

We have given the information you require, but with combs only four years old we doubt the necessity or even the expediency of removing any of them.]

RE-USING THE COMBS IN DESERTED HIVES.

I HAVE a nine-frame-hive that was deserted by its tenants last autumn, the runaways leaving the frames filled with comb containing much of bee-bread and some sealed honey. The box being left for some time without inspection, I now find

that all the combs are more or less mildewed, and the bee-bread, where not covered with mildew, has a moist watery appearance as though from fermentation. Would there be any danger attending the use of the combs? Is there any means of cleansing them? or if used would the process of cleansing by the bees themselves be more troublesome to them than profitable to—L. G.?

[If there be no foul brood in your deserted combs they may very probably still be made useful. Remove immediately as much of the mildew as possible by brushing their surfaces lightly with a soft brush, pick out any dead bees there may be in the cells, and then put the whole carefully away in a dry place out of the reach of mice, moths, or other vermin, until wanted for use.]

OBTAINING THE MOST HONEY.

I HAVE five stocks of bees—two in Woodbury frame hives, two in straw skeps, and one in an old-fashioned box.

The two in the Woodbury hives and one in a straw skep, having a flat top and a super to fit, are swarms of last year, the other two are older. As far as I can see there are plenty of bees having large stocks of honey in each.

Now, I want all the honey I can possibly obtain this season. Will you kindly advise me how to proceed to attain that end?

I tried putting small boxes on the top last season, but failed as they were always filled with brood.—NOVICUM.

[You cannot do better than put the usual sized supers on your Woodbury hives. These will hold about 25 lbs. each, and, if rapidly filled before the honey season be over, may either be removed and others substituted or raised on square wooden frames or boxes, without either top or bottom, from 3 to 5 inches deep, and of the same diameter as the supers. Side communication is preferable, as tending to prevent the queen ascending and breeding in supers. Full-sized supers should also be put upon such of the straw hives as will admit of it, and the others may be permitted to swarm. When the honey harvest is over the bees of the surplus stocks or swarms should be expelled by driving, and united to those intended to stand the winter.]

THE REV. W. C. COTTON AGAIN AMONGST US.

Most old apirians will remember the interest excited some three-and-twenty years ago by the appearance of "My Bee-book," by the Rev. William Charles Cotton, M.A., student of Christ Church, Oxon, and there are probably few among us either old or young that have not at some time sought with eagerness the opportunity of perusing it and thoroughly enjoying the genial style in which it is written, as well of admiring the profuseness and beauty of its illustrations. Long has he been absent from among us, and long have I and many others mourned for him as for one dead. I feel sure, therefore, that the breasts of hundreds will feel the same thrill of pleasure which pervaded my own on first hearing that he is not only yet alive and again amongst us, but that he takes much interest in what is going on in the apirian world, and is desirous of initiating some experiments connected with his old pursuit. That the genial pen which has so long lain dormant may again be roused to activity, and that this ripe scholar and accomplished gentleman may long be spared to investigate the hidden mysteries of apirian science is the fervent prayer of—A DEVONSHIRE BEE-KEEPER.

TAKING HONEY IN ASSAM.

LIEUT. COCK, 43rd Regt., N.I., writing in a recent Number of our sporting contemporary *The Field*, thus describes the native mode of taking honey from wild bees in Assam:—"On the 18th April, the Garrows* soon joined me, and told me they had marked a bees' nest, and would take it if I liked. Thinking a little honey would be nice, I said I would come with them. A naked Garrow now stepped

* The Garrows are a fine athletic race of savages, who go naked and live in the hills.

out and unslung the basket he carried on his shoulder, took the contents out, and put in some fresh green leaves. He then collected some eight or ten stems of a dried reed, and tied them together with a cane; round these he bound a lot of green leaves and a hooked stick, so that the hook projected beyond the faggot or torch. All was now ready, so I followed him to a tree, where, high up on a bough, was a bees' nest. It was about a yard in diameter, and hung suspended to the underside of the bough, like a great black cheese. The Garrow having lit his torch, swung up the tree like a monkey, hung his torch by the hook to a bough above the nest, with the lighted end hanging down under the nest, so that the smoke thoroughly cleared each side of the comb. This done, after waiting a few seconds, he cut off the comb, put it in his basket, and descended. He was only stung over the eye in one place."

EARLY APPEARANCE OF DRONES.

In my apiary of fifteen hives, one, a square box with a southern aspect, has already bred numerous drones, which to-day (Feb. 20th), although the ground is covered with snow, are flying around in great numbers. Apparently one quarter of the population of the hive consists of drones. I have kept bees for many years, but have never observed drones at an earlier period than the middle of March, and there is an old saying that "You may count upon a swarm three weeks after the appearance of the first drone."

This hive is heavy, and strong in bees. Can any of your experienced correspondents explain this phenomenon?

May I also ask for advice with regard to placing a swarm in a unicombed hive, and also in the Stewarton hive? A single box of the latter being only 4 inches deep would appear to me to cause a difficulty. Is it possible to obtain well-made Stewarton hives in the neighbourhood of London, and the price?

I may here mention a curious fact which occurred in one of my hives in the winter of 1863:—

On the 28th of June of that year I had a swarm, which was hived and placed in a retired part of my garden; in the following September its weight was 24 lbs. During the month of December this hive was overturned by a mischievous boy swinging near the spot. It lay bottom upwards for three weeks, snow having fallen, and several severe frosty nights having occurred meanwhile, before discovered, this mischievous imp not daring to proclaim his own delinquency. To my astonishment the bees were alive and flourishing. The hive was replaced upon its stand, continued to do well, and threw off a good swarm early in the following June.—GEORGE RAYNOB, *Kelvedon Hatch Rectory, Brentwood.*

[There is little doubt that the queen of your colony in a square box is a drone-breeder, but in the absence of all information with regard to the history of the colony we cannot explain how she has become so. She should be at once destroyed, and her subjects united to the nearest stock. If the box be furnished with bars her capture may readily be effected by lifting out and examining the combs. If destitute of this essential convenience, the bees should be expelled by driving, and must then be looked over until the queen be secured. Should you be unable to perform this operation the entire colony had better be destroyed by means of sulphur, and the remaining honey appropriated to your own use; or, if the combs be new and in good condition, the whole may be carefully preserved until the swarming season, when it will prove of inestimable advantage to a young colony.]

Stocking an ordinary unicombed hive is generally a very troublesome affair, but by adopting moveable bars the process becomes an easy one. There is little difficulty in furnishing any unicombed hive with moveable bars three-quarters of an inch wide by three-eighths thick. These should be ranged side by side in a box fitted to receive them, and at such distance apart as to be an inch and a-half from centre to centre of each bar. Guide-combs having been attached, the bees should be hived in the first instance, and allowed to work in this box, which must occupy the position destined for the unicombed. In three or four days the combs will have made such progress that during the middle of a

fine day they, with the bees, may be at once transferred to the unicombed hive. By means of this arrangement the colony may also be preserved alive through the winter if, as autumn advances, they are replaced in their original domicile.

A Stewarton hive should be stocked by having a swarm in the two lower boxes united and communicating with each other. These hives are manufactured so well and so cheaply in Scotland that no London workman can afford to make them at the price; nor are they, so far as we know, to be obtained in the neighbourhood of the metropolis.]

CRUMBLLED COMBS—DYSENTERY.

I RECEIVED recently from Germany a hive of bees in a straw hive. They were very lively after so long a confinement. The next day being very wet very few bees left the hive that day; but the day following was very fine; yet as only a few left the hive, I became uneasy, especially on perceiving they showed signs of relaxation on the floor-board.

On turning the hive up, I found numbers dead, with much comb crumbled, and, I believe, with little or no honey in the combs. I immediately gave them some food in a plate, but as I am from home while writing the above I cannot state the result as to their taking it.

I wish to know in respect to the faeces which, I have not the slightest doubt, from the colour and liquid state, indicate incipient dysentery, what food to give them, and how otherwise treat them.—T. S.

[The crumbled comb is owing either to the bees gnawing off the cell covers, or to the presence of the wax moth, which is a far more formidable enemy of bees on the continent than in this country. Fine mild weather is, we believe, the only effectual cure for dysentery, but feeding is often beneficial, and for this purpose we should prefer pure honey liquified by the addition of a little warm water, or even lump sugar and water only, to the mixture of moist sugar, ale, and honey. We have no faith whatever in any of the various nostrums recommended in bee-books as cures for dysentery.]

OUR LETTER BOX.

BEST AGE OF BREEDING FOWLS (*Abraham Dawson*).—A cock two or more years old, and a hen one year old, usually breed the best chickens. It is uncertain how long the fertilising influence lasts. It is certain one intercourse is sufficient for all the eggs laid by a Turkey hen in one season.

LICK ON CHICKENS (*Nelly*).—The result, in your case, is that which generally occurs when chickens are reared in a room. Nothing is so productive of parasites. They lack air, the scratch, and the numerous little essentials they find when at liberty. The train oil kills the vermin, but when they are very young it often kills the chickens also. In such cases it is almost as fatal as the vermin. We advise you to do away with your nursery, and to bring the chickens down stairs. Put the hen under a rip, in a sheltered spot, free from draught. Cover her up securely at night; choose the position so that if there be any sun the broods can have the advantage of it. Chickens seldom do well on boards, let them be covered over so thickly, and hardly ever in doors.

WHOLESALE PRICE OF EGGS.—I have read lately with some astonishment the prices made of new-laid eggs by a writer in your Journal. I have between eight and ten thousand eggs yearly from fowls kept by myself in a farmyard, and I find the average price I make of them is 6s. 2d. per hundred. They are sent to the shop generally every third day. If you, Messrs. Editors, or any of your numerous correspondents, would be good enough, through your Journal, to give me a few hints how I may dispose of them to better advantage, you will greatly oblige.—AN OLD SUBSCRIBER.

WHITE DORKING COCK'S LEGS PARALYSED (*H. Howell*).—Such paralysis may be the result of age, but it is more frequently caused by a hurt to the back. A blow from a stone or a small switch will often inflict fatal injury to the spine. It may be caused by stoppage. If that be the case, a dose of castor oil will give relief. A full tablespoon will be the dose.

POULTRY FOOD—ANNUAL EGG-PRODUCE (*Barndoor*).—Pollard is useful as an adjunct; but the best food for all poultry is ground oats—for a change good barley. The best food is the cheapest. Cochins, Chinas, Brahmas, Fowls, La Fâche, and Spanish hens should each lay 120 eggs in the year.

PLEASANT WITH WING WOUNDED (*Pheasant*).—If the bone is injured, and if the wound is so serious as to expose the injury, we advise you to amputate. If the bone remains perfect, all you have to do is to keep the wound well fomented, to let out matter that may form, and to exclude the air. If it is at all likely the operation may become necessary, do not defer it too long, it is not so serious as it sounds.

LIGURIAN BEES (*Jonas Jackson*).—You are quite right with regard to Ligurian bees losing much of their distinctive colour after death; still, as far as we can judge, those you enclose appear to be the offspring of a hybridised queen. If you will communicate your address to Mr. Woodbury of Exeter, he will be happy to send you a few dead Ligurians, and thus enable you to judge for yourself.

WEEKLY CALENDAR.

Day of M th	Day of Week.	MARCH 14-20, 1885.	Average Temperature near London.			Rain in last 38 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
14	Tu	Laurel flowers.	51.7	34.3	43.0	15	18 46	0 46	32 8	44 6	17	9 20	73
15	W	Common Stitchwort flowers.	51.1	32.7	41.9	17	16 6	2 6	35 9	8 7	18	9 2	74
16	Th	Dog Rose flowers.	50.7	34.6	42.6	18	14 6	4 6	37 10	34 7	19	8 45	75
17	F	Lilac foliates.	50.8	33.7	42.3	16	11 6	6 6	38 11	6 8	20	8 27	76
18	S	PRINCESS LOUISA BORN, 1848.	48.5	32.2	40.3	13	9 6	7 6	merc.	41 8	21	8 10	77
19	Sun	3 SUNDAY IN LENT.	51.1	32.9	42.0	13	7 6	9 6	36 0	26 9	22	7 52	78
20	M	Black Currant foliates.	52.1	32.4	42.2	14	5 6	11 6	30 1	17 10	23	7 34	79

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 50.9°, and its night temperature 33.3°. The greatest heat was 69° on the 25th, 1863; and the lowest cold, 14°, on the 25th, 1850. The greatest fall of rain was 1.11 inch.

ROYAL HORTICULTURAL SOCIETY.



FEW weeks ago we expressed a hope, which amounted almost to a conviction, that by the purging of the Council and the introduction of a purer element, the Royal Horticultural Society was about to emerge from its condition of inentity, and to abandon that anomalous course which it has pursued now for some years past.

We have not been disappointed, for, as the season advances, and the Council, aided by the fresh addition it has acquired, gets into full working order, we already see indications that the Society

will yet enjoy its full meed of popularity, and become what it might, always have been—the promoter and patron of national horticulture. Those who were present at the first of the scientific meetings, held last Tuesday, must have been deeply impressed with the truth of this statement. Not for many years have we seen so much indication of vitality and vigour as we did on that occasion. The collection of valuable new plants that was brought together for the inspection of the Floral Committee was such as is rarely to be seen in any one place; and the number of certificates awarded was sufficient evidence of the class of subjects exhibited. Of these a report will be found in another page of our present Number.

After the Committee finished their work, at three o'clock the chair was taken for the scientific meeting, at which a lecture was given on the plants or other subjects that were exhibited and received awards from the Committees. This meeting seemed to call forth no small amount of interest, judging from the number of Fellows present, reminding us of the palmiest days of old Regent Street, when the room was crowded with ardent horticulturists, of whom the “passing fair” were not the least conspicuous.

Heartily do we trust to see the Society prosper now that it has started on a nobler and a purer mission than pandering to the lowest of popular tastes, and affecting to hope for success through such a medium. Horticulture in itself, when liberally encouraged, has attractions far exceeding any others that have been offered in past seasons; and we hope, now that a new life has begun in the career of the Society, that all horticulturists will rally round the Council, and assist in making these scientific Tuesdays the most attractive, as they must be the most interesting, of all the Society's meetings. We know of no place where the Fellows or their friends could spend a more agreeable or instructive afternoon than there; and a large number appeared to anticipate this pleasure even at the first meeting of the season that was held last Tuesday.

But for one thing all would be harmonious, and we

sincerely hope that this, which consists in an estrangement between the Council and the exhibitors who object to the Saturday shows, may be removed, and that some basis of reconciliation may be devised, so that this year may be signalised as the resuscitation of the Royal Horticultural Society. The Society is already under a debt of gratitude to Lieut.-Col. Scott, R.E., for the unceasing energy and courtesy he has brought to bear on a work attended with so much difficulty and requiring so much tact and forbearance; and we should be glad to find that he has succeeded in bringing about a better understanding on this subject than at present exists. We believe it is to be done. As in all such cases, there must be a little yielding on both sides—a practising of the old Anglo-Saxon principle of *gif-gaf*, and then all will go on well.

LA CONSTANTE STRAWBERRY.

HAD not the Editors said in a letter to me that they thought that the ventilation of the subject would do good, I should have remained silent. I need hardly say, that I have no interest in the matter one way or the other. “*Magna est veritas, et prevalebit.*”

It is of no use for persons to write up a Strawberry above its merits, or to write it down below its just merits. Had it been stated that La Constante should be in the garden of every painstaking amateur, whose land is of a deep, rich, and loamy nature, not one word should I have said against the statement. In making the statement sent to THE JOURNAL OF HORTICULTURE, I had no desire to entomb such a worthy and valuable sort, when put into painstaking hands, and into soils to which it is adapted. I need hardly say that a “particular” is not a “universal,” and that it does not follow, because a Rose or Strawberry does not succeed in one class of soil, that it is to be entombed. Even in the same garden you will find that a Rose that will do nothing under a south wall, will do well under a north one. That is the case with Paul Joseph here. It grows strongly and blooms beautifully close to a north wall. For three years the seven plants have done nothing under a south wall. They are now put back to the north wall. I may say in passing, that here plants winter better under a north than under a south wall. The rains which come from the south-west are driven by the winds over them. Hence they are kept drier, and are also less injured by radiation.

Let me now say one word about hardiness. Hardiness properly must relate both to winter and summer. I must also add spring, when in my situation (a west aspect valley with a high chalky hill facing the rising sun), plants suffer more from the six or eight weeks of severe hoar frosts, than from the severe teeth of zero. I could not grow Pears or Peaches without sheets. These hoar frosts are preceded by a burning sun. Hence radiation, so mischievous to plants, is in the same ratio. It was these hoar frosts, together with chalk in the soil, that for ten years out of eleven destroyed my British Queens. La Constante did not suffer here, when established, from

either of these causes; but in a far less burning summer than the last, it suffered from burning very much. I, therefore, gave it up, determining to reinstate it, should I ever have clay land, to which, when dressed with sandy loam, it is well adapted, and where treated as stated by Dr. Roden, it would answer well. I think as the plant burns in hot summers, a north aspect would be best.

Then comes the question, Does the plant burn in some localities? It did so here, and, of course, it could not run afterwards. I was looking over Mr. Prince's list (Flushing, U.S.), when my eye fell on something that struck me. The catalogue is dated 1863; forty-ninth edition; and at page 8, I read as follows:—"No. 156. *La Constante* (De Jonghe), regular cone, large, bright crimson; flesh rosy, sweet, exquisite flavour; late, burns considerably!" It is no wonder, of course, that in America, a dwarf-habited plant should burn. The silver prize cup previously spoken of as awarded to it in America, by the Pomological Society, was, of course, for its fruit, and I presume without reference to it as a plant. If a plant was presented to the Pomological Society of New York, it was probably a forced plant. I should think that it would be a very good Strawberry to force, and that it would succeed very well. It would also be a very good Strawberry to breed from, if fertilised with such a Strawberry as President.

We want in this country, so diverse in its soils, and so changeable in its climate, Roses and Strawberries with vigorous constitutions to meet so many checks, and of quick growth, and quick establishment. Anything in the way of a plant that does not answer to the above is of no use to me. Annual plantations in first-class lands, and under able hands, may be practised successfully. The plants, however, must be put in early. Mr. May, of Blandford, the best Queen grower I ever saw, took two runners per plant from his British Queens during fruiting time, pegged into a pot. Hence he got his annual plants in early, which, in such fine land, fruited heavily. I have, however, seen in his garden a magnificent crop of Queens roasted, and the foliage burnt up. I found here that the easiest to cultivate of the three recommended by Dr. Roden, was the *Carolina Superba*. It was not at all tender. The plants and "brimmed" leaves were strong. I discarded it, as it did not crop sufficiently to repay me. So many people come to eat, twenty-five at a time, that I must have hardy sorts, good, and good croppers.

Now, as I have put in *THE JOURNAL OF HORTICULTURE* what Mr. Taylor has said, it is but fair to put in what Mr. Standish says. I received the following from Ascot Royal Nurseries a few days ago. It will be read with interest, and I make no apology for extracting from a kind letter, ending with an invitation:—

"Certainly *La Constante* is one of the most hardy kinds known. Mr. de Jonghe showed me letters from Russia, Germany, and all parts of the world, stating its hardiness, and my experience here confirms it, this being a very cold place. Dr. Hogg was here the other day, and coming across the heath, he told me he thought the wind would have cut his ears and nose off. I have a lot of Strawberry plants in the ground in beds on ashes. I have several thousands of *La Constante*, President, Oscar, Sir Charles Napier, and others. *La Constante* and President are the hardiest. The leaves of both are as green as in summer. The leaves of the others are cut in a very marked manner, and quite dead." He then goes on to say, that "he has fertilised *La Constante* with the British Queen with a view to get size, flavour, substance, hardiness, and productiveness; that he bred and fruited about five hundred seedlings from *La Constante* crossed by the British Queen; and that although the May frosts injured a good many of them, there were some wonderful crosses with all the size and flavour of the British Queen, and the fine colour of Sir Charles Napier, and, very curiously, there were scarcely two plants alike. "I shall have about two thousand seedling Strawberries, and shall be very pleased to see you at Ascot, to stop as long as you please, or till you are tired of tasting Strawberries."

The above kindness I much appreciate. Well, let us hope, then, that with *La Fertile*, and *Modèle*, and others, we shall have an accession to our fragarium that will stand the burning heats of summer and the rigours of an English winter. I trust that in the above article, and also in all

preceding ones, I have not expressed myself offensively, nor thrown myself open to suspicions of sinister motives.—
W. F. RADCLIFFE, Tarrant Rushton, Blandford.

BRICK STOVES.

NOTHING can well be more simple than a brick stove. A bricklayer who could hardly set a washhouse boiler could easily build a square of bricks with a square opening in the middle and two openings in front, one for the ashpit door and one for the furnace and feeding door, and then a third small opening, either on the other side or at the top, for letting the smoke out; the latter if a damper is not used is the best, as the object is not only to heat the stove, but to keep the heat about it as much as possible. All these stoves do better if the horizontal pipe is short, say about 2 feet, and then in general the upright pipe will not require to be long.

To please two or three other correspondents as well as "A. Q.," we will describe how to make one of these small stoves, say 28 inches square outside measure, and 46 or 48 inches in height, an inch or two more in height, even, we consider to be an advantage. If your chimney is to be inside your horizontal pipe may be less than 2 feet from the stove before entering the chimney. We will suppose it to be 2 feet, and therefore will begin at that distance from the wall, and also because the stove will give out more heat than if one side of the stove were formed by the back wall. Mark out the square of 28 inches, and cover that space with brick-on-bed. This forms the base, and the ashpit door will thus be the thickness of the brick above the floor. In the front and middle of this set up the ashpit door (one with a ventilator in it is the best), build up the rest, leaving opposite the door a space 8 inches wide, and say a foot long, and some 8 inches deep, and above that lay the bars and set up the furnace door. It will be best to have the furnace door and ashpit door all fixed in one. There will be holes for hooked pieces of iron to go in, which, carried into the brickwork, keep the doors firmly in their places. A fire-box, 8 inches square and 8 or 9 inches deep, formed of fire-lumps or fire-brick, should be placed at the side of the bars, and this box with outside bricks makes it often desirable that the ashpit door and the furnace door should be in separate pieces, as the bottom of the furnace door should be about the same level as the top of the fire-box. This allows of a facing of bricks between the two doors and round the fire-lumps. Raise the walls to the requisite height with brick-on-bed, leaving a hole 4 inches in diameter for the pipe, and say from 5 to 7 inches from the top. The top is best made of an iron plate from three-quarters to an inch thick. The heat rising will strike against the plate and be thrown back again on the brickwork before it escapes by the pipe. To make it more difficult for the heat to escape the front of the opening should have either an iron plate or a thin fire-lump set up on the top of the further side of the fire-box, and about 2 inches from the pipe, forming a sort of chamber in front of it, with openings on both sides between the plate and wall for the smoke to pass. This tends to keep the heat more confined in the stove. With this precaution, a close-fitting furnace door, and a close-fitting ashpit door, with a small ventilator in it, a damper in the chimney will scarcely be necessary. In one or two cases where the ashpit door had no opening we advised a small hole half an inch in diameter to be drilled and supplied with a wooden peg, and regulating that gave sufficient draught after the fire was burning. In cleaning out such fire-boxes they should be damped previously, and then for ease, if the grating is hung on pivots so as to fall when desirable into the ashpit, as described in Vol. XXV., page 134, it will be a great help.

Such a stove would be useful for excluding spring frosts and ripening the wood in an orchard-house from 30 to 35 feet in length and 10 or 11 feet in width. If more were wanted the stove would require to be larger and the fire-box larger, or two stoves would have to be placed in the house.

The iron plate being flat an iron vessel of water can be placed on it. But for that in your case you might have a hole in the iron in the middle, and place your chimney inside the house upon it, bringing it against the north wall and taking it through the wall, near the top. This

would be a simple mode, and then you would require a damper to fit the chimney nicely. One of the best to use would be a thin iron plate with two or three holes in the centre, in the line of draught, from a quarter to three-eighths of an inch in diameter. Pull out the damper when you lighted your fire, and when the smoke was pretty well gone, put it in home, and the holes would give enough of draught for coke, and the damper would send back the heat again and again over the stove. We would place the damper high enough to be reached from the floor. Coke only should be used, and broken.

As stated in "Doings of the Last Week" lately, you will be more safe to keep the blossom back in such a house, and only use your stove to keep the trees safe from frost. If you do more it would be advisable never to make the heat higher than 50° in dull weather, and from 45° at night would be high enough, unless you wished to force. In dull autumns a dry heat will be useful. If the iron plate become very hot you may cover it with brick. The higher the plate is from the fire-box in moderation the more equally will the heat be diffused from all parts of the stove.—R. F.

PLANTING A WASTE SLIP OF LAND—MODES OF HEATING.

WHAT vegetables or fruits will thrive on a narrow slip of ground fronting the north-east, bounded by a house on the one side, and a hedge on the other? Last year my predecessor planted it with Jerusalem Artichokes, but I question whether it has returned the seed.

I should like, also, to have a word about a hot-water apparatus that is beginning to attract some attention in your pages—I mean Mussett's. If it is what it professes to be it must be invaluable to small amateurs like myself; but it is quite contrary to the scientific principles laid down for years past in your Journal. I have been taught to believe by its pages that you cannot obtain more heat out of a fire than there is in it, and that in warming a house by the best-constructed apparatus, much of the heat is wasted.

How is it, then, that a couple of lamps should be able to warm a whole house, not to say "chapels, churches," &c.? For my own part, I have just put up a small house 10 feet by 8, and so little faith have I in Mussett's apparatus that I have ordered about 50 feet of three-inch pipe, which alone exceeds the cost of Mussett's. Do you not think you could say something simple and elementary on the subject of heating, which would be a guide to simple folk like me?—A REGULAR SUBSCRIBER.

[If the Jerusalem Artichokes did not flourish on the narrow strip of ground, fronting the north-east, it must have been owing to the poverty of the ground, or the confined space, surrounded by house and hedge, as this Artichoke will thrive almost anywhere. To have it nice this Artichoke should be planted every year, the same as Potatoes; for, though it will maintain itself in the same ground for a generation, the tubers are not so nice, nor yet so soft when boiled. Such a place would also do admirably for Rhubarb and Sea-kale, and for Lettuces and salading in summer. As to fruits, it would be a valuable corner for late Strawberries of the Elton or other kinds, and also for Warrington or other late Gooseberries. From such a corner you might have Gooseberries to the end of October, and good, too, if properly netted or canvassed, to keep wasps and flies from them. Currants could also be kept there late, and the Double-bearing Raspberry. Late Pears and Apples would also do, but not so well as the small fruit.

We can add very little to what we have said in previous weeks relative to heating small greenhouses in winter. No doubt a little allowance must be made for the enthusiasm of inventors and tradesmen, each of whom may rightly and conscientiously believe that his own particular mode is by far the best. Every man feels and acts in the same manner every day, though he may do it quite unconsciously. There is a vast difference between a thorough enthusiasm and the lines that approach dishonest misrepresentation; and the older we grow, if we do sober down the enthusiasm a little, we also feel less sceptical as to the thorough belief of the enthusiast in his own representations. Not so long ago one

who has had much experience in such matters, candidly told us that such and such idea, if reduced to practice, would pay well, "if sufficiently cracked up." Now, it is quite true that without this "cracking up" even good inventions will be apt to remain the sole property of the inventor.

In heating there has been little that is really new. A small fire beneath the floor is as simple and as good as any other contrivance. A pipe from a kitchen boiler, if the boiler is close, and the kitchen is on a lower level than the greenhouse, is also a very simple plan. A small iron stove, especially if the sides are double, or the fire-box about 4 inches from the single side, and a pipe through the roof, is also very simple; but the fire must be lighted inside, and care must be taken that the sides do not approach red heat. A brick stove is better than an iron one, because the bricks do not become so hot, and they retain heat longer than the iron, but then they cannot be removed like an iron stove; if placed against a back wall they may have plants set on them, or in front of them, in summer, or otherwise be concealed.

We have not tried Mussett's apparatus ourselves, but we have no doubt that it and Riddell's stove and boiler would answer admirably for small places. In one respect such an apparatus or boiler is better than a mere stove heated by a candle, lamp, or gas—namely, that the iron, being surrounded by water, will never become so hot as to be unhealthy to plants by burning the particles of dust, and consuming the oxygen of the enclosed air. It is on this account that we object to the continuous use of any stoves in plant-houses, with or without prepared fuel, where there is not some outlet into the open air to carry off the results of combustion. Such stoves, whatever their name, are less or more modifications of the stove and fuel, without any chimney, invented by Mr. Joyce nearly thirty years ago. Such a stove would be useful in large halls, in passages, &c., where there is a constant change of air from the opening of doors. In small close-glazed conservatories they are only less dangerous than frost, and might be used in extremes. In large conservatories, or where the glazing and the laps are open, such a stove would help to keep out frost, and the continuous admission of fresh air would prevent any or much injury being done. The prepared fuel would be an advantage in a small house, and no objection would exist if there were a small pipe to take off the results of combustion, farther than the care necessary to prevent the sides of the stove becoming too hot. We have known such stoves used in halls, warehouses, and shops with but little apparent bad effects; but then the air is more frequently changed than it is possible to be during a cold night in a close-glazed greenhouse. Even with the prepared fuel we consider such stoves more dangerous for tender plants than stoves or little boilers heated at once by lamps, candles, or gas, as, if carefully tended, little that is deleterious will be allowed to pass into the house. Even in their case, however, a small pipe going from the stove, or the funnel above the burners, will take but little heat outside, whilst it will insure safety from any effects of combustion.

We quite agree with our correspondent as to excessive enthusiasm in talking of heating whole houses, chapels, churches, &c., by means of a couple of lamps, a few jets of gas, &c.; but that is no reason why a couple of lamps should not heat a small house, no larger than a small room, as his own house, 10 feet by 8. It is so well known that a number of jets of gas will heat a church that, in severe weather, where there are no other means of heating, the gas is lighted an hour or two before the worshippers arrive. In the evenings, too, the heat from the gas renders the atmosphere oppressive, and especially if there is not a sufficient ventilation from the roof. We quite agree with our correspondent that only a certain amount of heat can be obtained from a certain amount of fuel, but we scarcely ever economise that heat sufficiently. We wilfully or ignorantly consent that a large amount of the heating power shall be wasted. Now, in many of these little stoves, with or without hot water round them, an attempt is made to obtain more than the usual quantity of heat from fuel or flame of any kind, just by preventing it exerting itself much on the external atmosphere. We could not pronounce a definite opinion upon any of these little stoves or boilers, without carefully working them all at the same time; but our

previous experience leads us to the conclusion that, if we did not demand too much from them, we should make them all answer well.]

DEARTH OF GOOD HORTICULTURISTS!

IN your recent report of the annual meeting of the Royal Horticultural Society Mr. Bateman is represented to have stated, as the reason why there are not more horticulturists on the Council, that there never was such a dearth of good horticulturists as at the present time!

Is it possible this was correctly reported? My own impression had been that we never had so many! and I therefore hope to hear that it was an error on the part either of your printer or reporter.

In the interest of the science pray inform me in your next Number, and oblige your attentive reader—J. C. C. (I enclose my card.)

[Our report was quite accurate, and Mr. Bateman has given great offence to the horticultural community, who most assuredly do not deserve such a censure. We believe that there are more good gardeners, amateur, as well as professional, and more good gardening now than at any other period.—Eds.]

ROYAL HORTICULTURAL SOCIETY.

MARCH 7TH.

FLORAL COMMITTEE.—The first meeting of this Committee was held on this day in the Society's garden, South Kensington; there was a full attendance of the members, and a great many interesting plants sent for examination.

Mr. Veitch, Chelsea, exhibited a large miscellaneous collection of plants, which added much to the interest of the meeting. Among this collection several plants received certificates, both as novelties and as well-grown specimens. It was quite encouraging to hear the gratification expressed by several of the Fellows present at seeing so fine a display of plants; and it is much to be desired that others of our leading nurserymen would occasionally follow Mr. Veitch's example, by sending collections of miscellaneous plants, or a series of such as represent any particular family. We would remind the Fellows of the Society, also, how much they might contribute to the interest of these meetings if they would send any plant or flower for exhibition which bears any special interest. Among the Orchids in Mr. Veitch's collection which received special notice, was a new *Cypripedium*, *lævigatum*, from Manilla. This is a very distinct and handsome species; the upper segment of the flower white, with dark veins; under lip yellow, with long, brownish, narrow, waving, side petals; the foliage very handsome and bright green. This received a first-class certificate. *Angræcum* species from Madagascar was a very pretty small Orchid, growing on a portion of a stake of wood, and having a white spike of small white flowers bearing a conspicuous spur. *Cattleya Pilcheri*, one of Mr. Dominy's hybrids between *C. crispata* and *Lælia Perrinii*, promises to be an interesting variety, and the Committee requested to see it again. *Phalænopsis Schilleriana* major, with beautiful broad mottled foliage, the flowers much larger than those of *P. Schilleriana*, and of not so deep a colour, received a first-class certificate. *Odontoglossum Pescatorei splendens* had a similar award. This most elegant Orchid is one of the cool-house section; the plant exhibited had flowered in a house with a temperature varying from 40° to 45°. Mr. Veitch also exhibited *Lælia Lindleyana*, white flower with pale purple lip, narrow upper and side petals—first-class certificate; *Barkeria Skinneri* *superba*, with bright purplish rosy spikes of flowers, which were abundant—first-class certificate; *Cattleya Warscewiczii*, only one flower on the plant to be seen; *Lycaste Skinneri* *alba*, a distinct variety with a pure white lip, giving the flower a very delicate appearance; Seedling *Rhododendron* *Princess Alexandra*, the flowers white on dark red footstalks, highly scented, in the form of *jasminiflorum*—first-class certificate; and *Lyttis filipes*, an old plant, useful for table decoration, for which it received a special certificate. This elegant and graceful plant, with its racemes of white and yellow flowers, was much admired. A special certificate was awarded to

each of the following plants, sent also by Mr. Veitch:—Collection of *Lycaste Skinneri* of endless variety, specimen plant of *Cœlogyne cristata*, *Phalænopsis Schilleriana*, *Camellia* *Roi Leopold*; and one for the general collection sent, including *Hyacinths*, *Narcissus*, &c.

Mr. Wilson Saunders had *Cotyledon* sp. from South Africa, resembling *Cotyledon orbicularis*—the plant produced a cluster of brownish-red flowers on a tall stem growing from the centre of thick fleshy leaves, interesting only as a curious plant; also a hybrid seedling *Sonchus* between *S. arborea* and *S. gummifer*. This plant had beautiful translucent dissected foliage, forming an elegant plant for table decoration, and as such received a first-class certificate. A species of *Brassavola*, sent to the Society by their collector Mr. Weir, and supposed to be *B. nodosa*, was also shown. Mr. Bateman contributed a superb cut spike of *Phalænopsis Schilleriana*, with about forty beautifully expanded flowers—special certificate; *Dendrobium Wallichianum*, a cut spike of this plant thought to be wrongly named; *Dendrobium hedyosmum*, a dwarf plant with white flowers having a yellow lip, remarkably sweet-scented, for which property it received a label of commendation.

Mr. Marcham, Hanwell, sent three seedling *Cinerarias*; Mr. Gibson a cut specimen of *Nicotiana wigandoides* with greenish-white flowers; Mr. Standish, Ascot, *Camellia reticulata* *flore pleno*, a very handsome, large, deep crimson flower—first-class certificate; *Camellia Reine des Beautés*, a very reflexed, pale-shaded, flesh-coloured flower of exquisite form, bright green foliage, a perfect gem—first-class certificate; *Corylopsis spicata*, a hardy Japanese shrub with pale yellow flowers, scented like the Cowslip—beyond its being an early spring-flowering shrub it has no claim for particular notice—and a small plant of *Aucuba japonica* *vera*, with beautiful bright scarlet berries. Mr. Bull exhibited an interesting collection of *Aucubas*, discovered by Dr. Von Siebold, many of them female or berry-bearing varieties, with very handsome foliage. Most of the plants were very small, too small to enable the Committee to decide upon their merits. *Aucuba macrophylla*, a very large, broad, green-leaved variety—first-class certificate; *Aucuba mascula elegantissima*, the leaves with broad, yellow, central markings, bordered with green—first-class certificate; *Aucuba latifolia femina*, a very dark glossy green-leaved variety—first-class certificate; *Aucuba bicolor*; *A. sulphurea*; *A. lanceifolia mascula* *variegata*, with pale green variegation; *A. mascula angulata*; *A. mascula elegans*, smaller foliage than *elegantissima*, different shaped leaf; and *A. himalaica*, bearing unripe berries on long and loose footstalks. Mr. Todman, gardener to Mr. Hodson, exhibited seedling *Azalea* Dr. Lindley, deep rose, smooth-edged flowers, of good substance; Lord Palmerston, rose, with faintly-spotted centre; Lord Stanley, orange scarlet; Mont Blanc, a semi-double white flower, inferior to Flag of Truce. The plants were small, and there were not sufficient flowers to determine their merits; there appeared to be nothing new among them.

Mr. Graham, Cranford, exhibited a seedling *Violet*, *The Czar*, with very large flowers, highly scented; dark, robust, green foliage. Some discussion arose as to its identity with other *Violets*—namely, *The Giant*, *Devoniensis*, and *Russian Improved*. It is a valuable seedling from whatever parent it sprung, and was awarded a first-class certificate.

FRUIT COMMITTEE.—George F. Wilson, Esq., F.R.S., in the chair. Mr. Wills, gardener to Sir Philip Egerton, Bart., Oulton Park, sent a seedling Apple raised near that place, and called Oulton Russet. It is a handsome-looking medium-sized fruit, somewhat flattened in shape and ridged round the apex. The flesh is tender, and has a very pleasant flavour. The tree, Mr. Wills says, is "one of the most constant fruiting kinds he knows; for four seasons they have borne good crops of Apples." The opinion of the Committee was that it is a good Apple, but that the flavour was apparently passed, and that they would like to see it again earlier in the season. Mr. Dwerrhouse, gardener to Lord Eversley at Heckfield, sent five specimens of *Bergamotte Esperen*, which were evidently from an orchard-house; but as no letter nor name accompanied them, the Committee did not know the circumstances under which they were produced. They were accompanied by specimens of apparently the same variety grown out of doors, but which were very inferior in size and appearance.

Mr. John Shaw, nurseryman, Manchester, sent a collection of a new sort of tallies for naming trees and shrubs. They consist of plates of polished zinc, of various sizes and ornamental shapes, and the names are engraved deeply in the metal, the space being filled with a black substance, thereby rendering the name clear and distinct. The Committee approved of these, and considered them well adapted for the purpose, provided the black substance remains permanent, and the polished surface does not become so tarnished as to render the name indistinct. Mr. William Earley, gardener to F. Prior, Esq., of Digswell, also sent a label for trees and shrubs, which consisted of thin plates of zinc painted white, and the name cut through in the way of a stencilling plate.

After the meeting of the Committees the Scientific Meeting was held at three o'clock, W. Wilson Saunders, Esq., F.R.S., in the chair. The room was well filled with Fellows, of whom a considerable number were ladies. The Chairman congratulated the Society on a return to these meetings, which had always been so attractive and attended with so much interest at Regent Street, and then proceeded to comment on the programme of the year. He stated that it was the object of the Society now to promote in every way the advancement of horticulture, and for this end all its resources would be called into operation. The garden at Chiswick would this year be devoted to very extensive experiments both in fruits, flowers, and vegetables, and everything would be done to enable the Society to carry out the legitimate objects it was instituted to foster.

The Rev. M. J. Berkeley then delivered a lecture on the various plants that were exhibited before the Floral Committee, and Rev. Joshua Dix made some observations on the florists' flowers.

WEEKLY SHOW.—MARCH 11TH.

On this occasion Messrs. Lee exhibited fine plants of *Cordyline indivisa*, *Davallia tenuifolia*, with very graceful finely-divided fronds, *Cyathia Smithii* about 6 feet across, and *Oncidium Phillipsii* in excellent bloom. From Mr. Bull came a small collection of flowering plants and Camellias *Contessa Ottolini*, a finely imbricated rose with broad and handsome foliage, and *Raffi* deep rose; also *Anthurium leuconeurum* and one of his ornamental stands for the drawing-room. Mr. Coyah, gardener to E. Wood, Esq., Rugby, contributed a well-bloomed plant of *Deutzia gracilis*, *Thyracanthus rutilans*, and a mixed collection of flowering plants, whilst Mr. Lucking and Mr. Greeves sent window-baskets, bouquets, and flower-baskets filled with *Hyacinths*, and other early flowers.

PRIZES PAID BY THE ROYAL HORTICULTURAL SOCIETY.

I HAVE recently received from the Accountant of the Royal Horticultural Society a letter, stating "the pleasure which he has in enclosing me 7s. 11d., being the amount of my prize account for the last two shows." I exhibited at the first of these shows, and obtained first-class certificates: first for Pears *Beurré Langelier*, *Catillac*, and *Beurré de Rance*; second for "the best large table Potatoes, the variety *Lemon Kidneys*, a very handsome and excellent Potato" (I copy from their report); and at the last of the shows I obtained third-class certificates for Apples and Turnips.

Now, with many other gardeners who exhibited, I believed that I should have medals to show my success, and probably a trifle in money. The pleasure which is expressed in sending me 7s. 11d. for my four certificates is not felt by me in the receipt of the money. Surely some explanation should be given as to the mode of payment and how it is calculated. If half-a-crown had been sent to me I must either have received it or rejected it. Success at two shows with no medal and 7s. 11d. only in money will hardly attract exhibitors to the high-sounding Royal Horticultural Society. It would be well if the Society would forward to you for publication what is the average value of their different certificates, and in what cases only medals are distributed, and also the amount of their receipts for admission, and the scheme

upon which the money was divided amongst the exhibitors. Unexplained, the prizes are not worth competing for.—H. BENTLEY, *Gardener to Lord St. Leonards, Thames Ditton.*

I MUST inform you that the Royal Horticultural Society sent me 2s. 3d. worth of stamps for a first-class certificate for a Queen Pine, and a third-class certificate for six dishes of kitchen Apples exhibited at the Great International Fruit Show in 1864.—THAMES DITTON.

[No remark is needed to increase the ridicule felt at such awards; but we rejoice to be justified in adding that an entirely new spirit is gradually being infused into the management of the Royal Horticultural Society, and though why those awards were so contemptible may be explicable, yet we think in future there will be no need of any such explanations, as a much more dignified policy has already been inaugurated.]

VISITS TO GARDENS PUBLIC AND PRIVATE.

MR. W. BULL'S, EXOTIC NURSERY, CHELSEA.

IF "variety is pleasing," as we used to be taught in our boy days, when undergoing our preliminary instruction in round hand, then ought Mr. Bull's life to be one of unmixed gratification; for so little reverence has he for what is old and well known, that, save in the matter of large specimens, these qualities would be an absolute disqualification for any plant that sought admission into his establishment; but let it have but the recommendation of novelty combined with merit, and then it matters little from what portion of the world it comes, or for what it may be remarkable, it will find there a home. After my stroll through Mr. Veitch's the other day I spent a short time with Mr. Bull, and have here to record a few things that struck me on going through his numerous plant-houses. At this time of the year I need not say they present a very different aspect to what they do later in the season, and that one must not expect to see any gorgeous display of flowers. The mere loiterer, who can admire a blaze of colour or be captivated by a fragrant perfume, must not expect to be gratified just now; but those who want to know what new treasures skill and enterprise are adding to our horticultural stores will here find much to interest: especially is this the case with what are called fine-foliaged and variegated plants, to which Mr. Bull is continually making additions, and of which many interesting examples are now in his establishment.

As I some time since recorded my general impressions of Mr. Bull's nursery, my notices now must be brief, and pertain simply to those things which strike me as likely to be valuable additions to our already ample stores. Thus, for example, we have heard a great deal lately of the *Aucubas* from Japan, and probably no plant has had more distinguished honour conferred upon it than that fine plant of the female *Aucuba* in full berry. Very interesting, therefore, were some varieties of variegated *Aucubas* which Mr. Bull has received from the continent, the introduction of Von Siebold. The golden variegation is not, as in the common form, spotted all over the surface of the leaf, but in large blotches of gold colour; and we can hardly conceive anything more beautiful than would be one of these fine varieties when grown into a large bush. There can be little doubt that these Japanese introductions will make quite a revolution in our gardens ere long. There was also a very beautiful golden-variegated *Elæagnus*. Nor must I omit the beautiful variegated *Pampas Grass*. Striking as is the normal character of this plant, it will receive no inconsiderable attraction by this beautiful and distinct variegation. Then there were the very fine gold and silver variegated *Rhododendrons* from Japan. Handsome, too, are some of the *Acers* from the same country; conspicuous amongst which was *A. pseudo-Platanus Leopoldi*, green with crimson and rose variegation. Then there was a very fine variegated *Verbena* which is to be sent out in April, called *Popular*, in which the leaves are clearly marked with a regular yellow variegation, and having bright scarlet flowers; and also a silver-variegated *Pompon Chrysanthemum* called *Sensation*. Both of these plants will, I think, be considered acquisitions by those who are fond of such things. Nor must I omit two plants not yet out—a variegated variety of *Aubrietia*

purpurea, in which the marking was very regular and clear; also a very pretty *Sedum* of the same character. The variegation even descends to Ferns, for there was a distinctly variegated form of *Acrophorus hispidus*, and a new variegated *Pteris*, something between *P. cretica albo-lineata* and *P. serrulata*.

Amongst the rarer stove and greenhouse plants, of which Mr. Bull has a large selection, I may mention the fine *Anthurium* to which I have already alluded in Mr. Veitch's collection as introduced by Mr. Weir from South America; also the pretty *Peperomia arifolia*, with beautiful wax-like leaves and beautifully variegated. I have already alluded to the fine varieties both of *Dracæna* and *Pandanus*, so very useful for in-door decoration. *Ouvirandra fenestralis*, the Lace-plant of Madagascar, will now be generally grown, and was to be seen here in small plants ready for distribution. Then there is the curious *Cephalotus follicularis*, sufficiently hardy for ordinary greenhouse culture.

Amongst Ferns I noticed a crested variety of *Nephrodium molle*, *Adiantum Féei*, the crested variety of *Polystichum angulare*, and the new forms of *Athyrium Filix-femina*, *Vernonæ* and *Victoriæ*. *Lastrea Standishii* can hardly be called a new Fern now, but it will certainly for a long time be valued as a handsome and free-growing one.

Of the numerous softwooded plants—the *Petunias*, *Pelargoniums*, *Pentstemons*, it would be premature to speak. We can only look forward to seeing them by-and-by, and reporting in due time; and that we may have to report favourably of many is, I think, most likely, for unquestionably in Editor, Clipper, Miriam, Lorenzo, &c., we have had flowers of decided merit. Nor must I forget that Mr. Bull has a large quantity of the fine *Lilium auratum*, of which he has a consignment of upwards of 2000; while he has also been successful in obtaining a very clear and distinct variety in *Lilium auratum rubro-vittatum*, in which the golden band gives place to one of deep red, and it is quite possible that amongst the more recent arrivals may be found other varieties. From these two establishments, Mr. Veitch's and Mr. Bull's, different indeed in character, one may gain an idea of the great amount of enterprise which the present taste for horticulture has called forth.—D., Deal.

TURVES FOR STRAWBERRIES IN POTS.

In your No. 204, page 156, Mr. Abbey says, "Never use saucers, they rot the roots by keeping the soil sour; use sods in preference, the turves being placed on the shelves grass side downwards." Last year I placed about one hundred Strawberry plants in pots on shelves in my orchard and cool Vine-house (seldom heated), in this manner; the rest of the pots in saucers. Two days after I was told by a very experienced gardener that those on sods would be totally destroyed by wireworm, and I at once removed them into saucers. I had four kinds of Strawberries—the British Queen, Keens' Seedling, Black Prince, and Empress Eugénie, all of which produced good crops. My gardener is now bringing my Strawberry plants in pots into the cool Vine orchard-house, and I shall have a portion of them placed on turves in consequence of Mr. Abbey's recommendation, some also in saucers, and a few as an experiment in a shallow trough of zinc filled with sand, to compare these different modes of culture.—E. S.

[I object to saucers on the ground of their being kept full of water mainly during dull weather and the early stages of the plants' growth. I have found saucers more prejudicial than beneficial, unless you water the plants yourself, or have assistants equally careful. The saucers are of no use until the fruit is set, all that is needed is a cool and moist bottom to counteract the drying influence of artificial heat on the pots, and, consequently, on the roots. After the fruit is set a good supply of water is necessary to make the fruit swell well, and there is less probability of the plants suffering for want of water when standing in saucers than when standing on the bare shelf, and they, by holding water, assist in keeping the air about them cool and moist, and are more desirable after the sun gains power than early in the season. I never found Strawberries do well in a wet undrained soil, but find them do best in strong soil deeply stirred which will let the water through it and out at the

bottom. I never saw or found the Strawberry, wild or in a cultivated state, growing in a marsh or bog, and for these reasons I take it for granted that saucers may lessen the necessity of watering the plants, but they give a soddened and sour soil not congenial to the growth of the roots. With sods the case is entirely reversed. They furnish a cool bottom; the atmosphere is kept moist around the pots through the evaporation from the turves; the roots make their way into them; any one can water the plants without fear of making the soil in the pots sour; and the plants derive nourishment from the turves. On sods the plants can never be watered too much, for the soil will hold no more than its retentive power permits, and that is all that is necessary for the plants at the time. When the saucers are not used, or the water not allowed to remain in them for any length of time, then none of the evils of keeping them constantly filled present themselves; and there is less likelihood of harm when the saucers are used at a later period, for the sun having more power a more constant supply of water is needed. With careful watering Strawberries do well in saucers, but these are of no use until the flowers open, and ought to be emptied an hour after watering. Troughs to retain water are just as bad as saucers, though I know both do well for swelling fruit; but the danger is the same in both—viz., with careless watering at the early stages the plants are apt to become too wet, and the roots rot instead of multiplying. I have used turves for many years, and how long they were used before my time I cannot tell, but I never heard of any complaints of wireworms doing injury to the plants. Perhaps I make the soil obnoxious to them, by strewing a little soot over the rough soil placed over the drainage at the bottom of the pots when potting the plants into their blooming pots, or drive them out of the sods by saturating them with soot and manure water. I use the sods on which the plants are placed for potting the plants intended for forcing another year, and what is to spare forms, with the addition of one-third leaf mould, an excellent compost for *Pelargoniums*, *Cinerarias*, *Calceolarias*, and the like.—G. ABBEY.]

VARIEGATED BORECOLES AS WINTER BEDDING-OUT PLANTS.

Will you tell "K. D. T." what time the *Brassica oleracea* *prolifera* should be planted for winter bedding, as it is described as being so pretty at Miss Hope's, of Wardle Lodge, in your Journal of February 21st? Should it be transplanted according to the colours the leaves become, or sown at once where it is to remain?

[Were we to make beds of the variegated Borecoles, we would sow in April, and prick out the plants on a border or quarter about 15 inches apart, and lift and arrange them according to colour as soon as the summer bedding plants were removed. Some of the whites, purples, and nearly reds, are very pretty; but there is no question that however beautiful they may be, they suggest ideas of the kitchen, just as a row of dark-coloured Beet does.]

PLANTING RAISED BEDS—SOWING PERILLA.

I INTEND having two match oblong-beds, which to suit the situation, require to be raised as much as possible. I thought of planting one of them with *Calceolaria* for centre, a band of *Perilla* next, another of Scarlet *Geranium*, with a slight edging of some white plant. Could each different colour be raised a little above its neighbour, to produce as good an effect as if planted in the common way? If the bed is much raised to the middle in the shape of a mound, the water runs off. Can you say how a bed would look with *Perilla* for the centre, with four lines of *Cineraria maritima* running through it at equal angles from the middle? Would this style be effective, applied generally, not to the plants I have quoted in particular? I should like to know also, the proper time to sow *Perilla* seed, in order to have good early plants.—F. T. C.

[It would be advisable to plant your match oblong-beds in the same manner—that is, if they must pair, such as

instance, as being placed one on each side of a walk or an avenue of grass. Your proposed planting of yellow Calceolarias for centre, Perilla on each side, and then Scarlet Geranium, bordered with Cerastium, or Cineraria, would look very well. Unless your Calceolaria is a strong one, we would prefer the Perilla for the centre, as it would give less trouble in nipping, &c. You do not say what the width of the beds is, but supposing they are 10 feet wide, you might safely raise the centre from 24 to 30 inches. Your lines will show all the better in consequence. The difficulty as to the water running off may easily be neutralised by surface-stirring and then mulching with rotten dung or leaf mould, or cocoa-nut refuse. We find that in such raised beds the plants put highest need the least watering, owing to the roots having a greater depth of soil. If you put Calceolarias at the ridge, they will need mulching as soon as the sun has warmed the ground sufficiently. Crossing and Vandyking such beds as you propose will also look well, especially from the sides. The straight rows will be most telling from the ends, and easiest done. Sow Perilla seed in a hotbed before the end of March.]

LONICERA AUREO-RETICULATA.

CHRYSANTHEMUM STEMS KILLED BY BURNING SULPHUR.

On the 7th of October last, I had an accident with a sulphur-fumigating apparatus which I invented, and, in consequence, destroyed the whole contents of my greenhouse by the fumes. Amongst the rest there was a lot of fine Chrysanthemums (including the Japanese varieties), just coming into bloom. The leaves and stems of these were all killed. The plants have since sent up fine shoots, which are now from 12 to 18 inches high, and look as if they would flower now. Had I better cut down the stems and make cuttings from them, as is usual at this period, or let them flower?

Enclosed I send you a piece of the Japanese creeper, *Lonicera aureo-reticulata*, it had originally a smooth-edged oval leaf, deeply veined with golden network. It was killed, or rather its leaves were, by the sulphur fumes, and now the leaves appear with an indented edge and minus the veins, or least with very small ones. Is not this rather a curious effect?—SIGMA.

[We are rather doubtful as to your Chrysanthemums flowering now, but we would take off some pieces for cuttings or little plants, and let the rest remain until you see what they will do. If by retarding or cutting down in October we could have bloom in March and April, it would be a good acquisition. By all means, let some, at least, of the plants remain, and let us know the result.

The slip sent is so unlike the *Lonicera aureo-reticulata*, that it is possible something else has come up in the pot. The leaves, also, seem more herbaceous than shrubby. It is possible, that from shooting strongly and vigorously it has taken the present appearance. If so, it will revert to the original type as it grows older. You have learned one important lesson—namely, never to use burning sulphur where there is anything green.]

LIST OF FLOWERS.

I, too, would enter my caveat, with my good friend "P. H. G." (who, I am glad to see, has escaped alive from those monsters of the deep, into whose domestic arrangements he has been prying for the last twelve months), against the very loose and indefinite manner in which one is asked for lists of the best flowers, and in consequence of which the answers must often be very unsatisfactory. A correspondent, e.g., wants the names of the best twelve *Pelargoniums*. Now, these vary in price from one guinea to one shilling. If I send "Inquisitor" or a "Constant Reader" a list, in which, perhaps, John Hoyle and Mary Hoyle, and British Sailor figure, I should be told he did not mean new varieties, they are beyond him; while, if I take the older sorts, "Oh! I have all those," is the rejoinder. It would, then, be a great help to us, when asked for such lists, if queries would be kind enough to say—1st, Whether price is an object; 2nd, Whether they have any of the

flowers about which inquiry is made; 3rd, Whether they are wanted for exhibition purposes, the home greenhouse or garden, or for decorative purposes generally. And then they must also remember that judges differ as to which are the best flowers out. My opinion may be different from my neighbour's; he may admire size, while I prefer symmetry; or he may think colour the main point, and I hold that colour, without substance, is worth nothing: hence two persons, equally trustworthy, may give very different lists. With this caveat I reply to "R. T."

Best Eighteen Show Dahlias.—Alexander, white tipped; Beauty of Hilpertown, purple; Bob Ridley, bright red; Caractacus, yellow, with red tip; Charlotte Dorling, white, edged with crimson; Charmer, yellow buff; Golden Drop, yellow; Lady Douglas Pennant, primrose; Lady Popham, white, tipped with lavender; Lord Derby, bright rosy crimson; Donald Beaton, shaded maroon; Rachael Rawlings, pale peach; Umpire, pure white, with delicate edge; Triomphe de Pecq, crimson scarlet; Mauve Queen, light mauve; Lord Clyde, red; Mrs. W. Piggott, white; Midnight, very dark.

Best Eighteen Fancies.—Lady Paxton, red, tipped with white; Coquette, blush, with maroon stripes; Countess of Shelburne, white, tipped and edged with purple—may be shown in both classes; Elegans, white, striped with purple; Confidence, lilac striped maroon; Gem (Stafford's), crimson, tipped with gold; Leopard, bush dark-striped and spotted; Madame Lemmens-Sherrington, dark purple, tipped with white; Norah Creina, bright orange, tipped with white; Oliver Twist, purple-and-white striped; Queen Mab, pure white, with scarlet edges; Rev. Joshua Dix, blush, striped with dark crimson; Fairy Queen, medium, tinged and shaded with pink; Magpie, black, tipped with white; Zebra, bright scarlet, striped white; Summertide, chocolate, tipped with white, and striped; Starlight, deep scarlet, tipped with white; and Sam Bartlett, deep yellow, tipped with scarlet.

Best Six Light Fuchsias.—Bianca Marginata, Fair Oriana, Guiding Star, Minnie Banks, Madame Tietjens, Rose of Castile.

Best Six Dark Fuchsias.—Charming, Don Giovanni, Mdle. Trebelli, Puritani, Finsbury Volunteer, and Oberon.—D. Deal.

VEITCH'S EXETER NURSERY.

Your excellent correspondent "D. Deal," in his report of his visit to the establishment of Mr. James Veitch, of Chelsea, does, I think unwittingly, an act of injustice to my friend Mr. E. Veitch in stating that the Exeter establishment, so long carried on under the name of Veitch and Son, has been abandoned, and that the whole energies of the firm are concentrated on the London nursery. It would appear from this statement that no nursery establishment, presided over by any member of this family, exists or will be carried on in Exeter; and if such an idea were to be generally received, it would act injuriously to the interests, not only of Mr. E. Veitch, but to the city of which I am proud to be a citizen. It is true that the late firm has been dissolved, and that Mr. Robert Veitch, for reasons with which I have nothing to do, has decided on not continuing his business at the old nursery. He has, however, taken ground and commenced the formation of one, which will be very much more convenient to Exonians and to visitors to one of our principal streets, and very near to the stations of all the lines of railway. A large portion of the stock has been, or will be, removed from the old establishment to the new nursery, and extensive ranges of houses are in course of erection.

The prospect of the entire breaking-up of the Mount Radford establishment has been a subject of deep regret to our citizens generally; and it is with no small satisfaction that we find the honoured name will still be connected with us. A large amount of the energy, so long synonymous with the name of Veitch, will still be a characteristic of the head of our new nursery, and as with the exceeding liberality, which has so long distinguished the firm, visitors will be admitted with the greatest possible freedom, we cannot but look upon the nearer approach of this nursery to our town-walls as a great and undoubted boon.

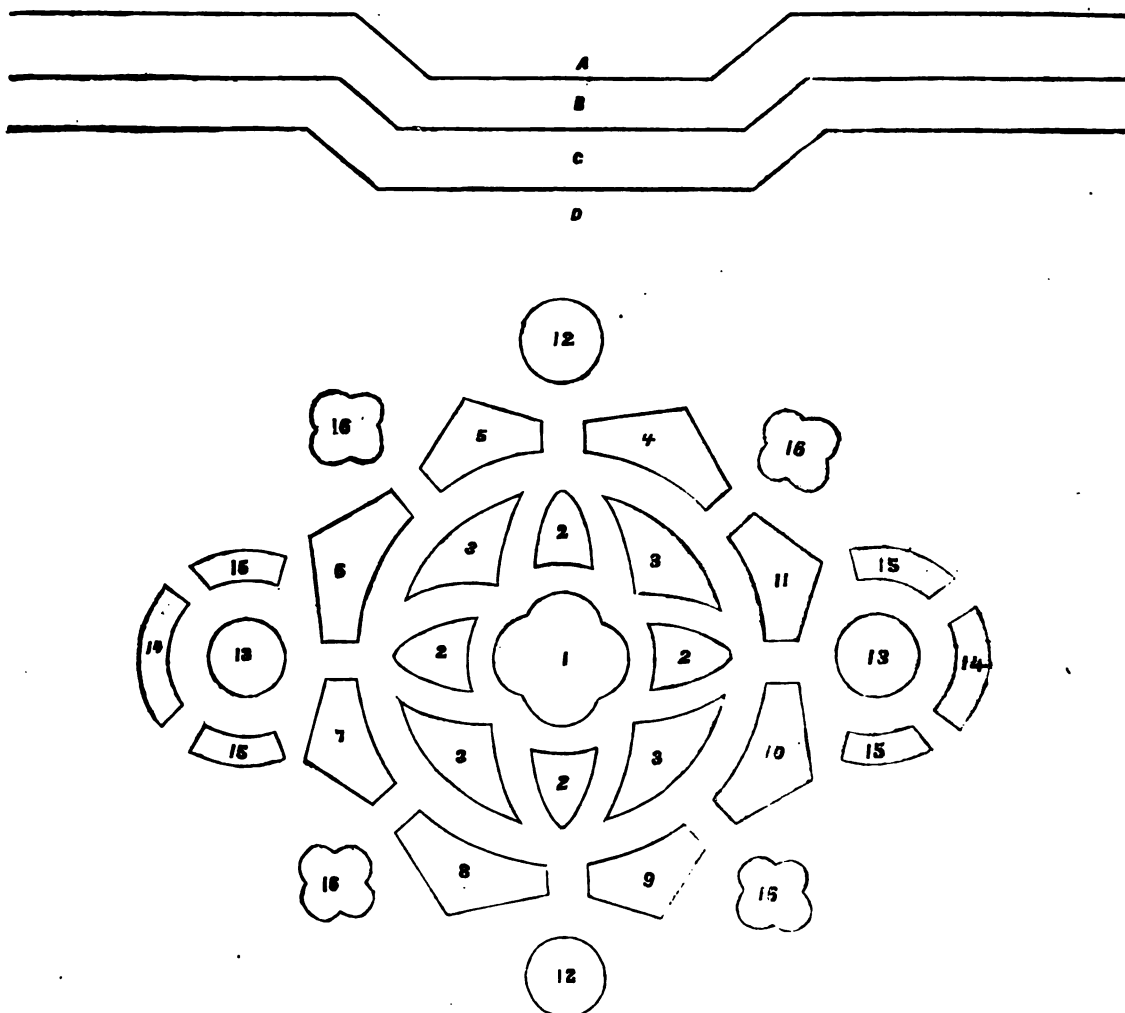
The extensive seed establishment, so long conducted in

our High Street by the late Mr. Veitch, has also come into the possession of Mr. Robert Veitch, and will be carried on by him in connection with the Queen Street Nursery.

I trust "D., Deal," will not think I have stepped out of my way in thus endeavouring to remove a misapprehension

of the actual facts of the case, as regards Mr. Veitch of this city. He will see that the unintentional error into which he has been led, will, if it be allowed to remain unnoticed, be likely to injuriously affect the interests of a worthy man, and the esteemed friend of—S. BEVAN FOX, *Exeter*.

FLOWER-GARDEN PLAN.



A, House. B, Flower-border. C, Flagged Path. D, Grass.

THE border (B) in front of the house in the above plan is to be planted in three lines—Trentham Rose Geranium next the house; then Lady Plymouth Geranium; and Lobelia Paxtoniana next to the path.

The beds are proposed to be planted as follows :—

1. Purple King Verbena, Cerastium outside.
2. Yellow Calceolaria.
3. Mangles' Variegated Geranium.
4. Trentham Rose Geranium, edged with Golden Chain.
5. Stella Geranium, edged with Golden Chain.
- 6 and 7. Mixed Verbenas, edged with Flower of the Day or Alyssum.
8. Trentham Rose Geranium, edged with Golden Chain.

9. Crystal Palace Scarlet Geranium, edged with Golden Chain.
- 10 and 11. Symmetry Geranium, edged with Alma.
12. Blue Lobelia.
13. Purple Petunias.
14. Golden Chain, Lobelia Paxtoniana, edged with variegated Arabis.
15. Christine Geranium, edged with Arabis.
16. Yellow Calceolaria.

—E. A. L.

[Your garden is very nicely drawn (though by a mistake of the engraver some of the beds are not so exactly balanced as they ought to be), and no doubt will look very pretty planted as you describe. As you have done the most of it on the cross-planting system we would continue this throughout. Thus, instead of making 6 and 7 the same and 10 and 11 the same, we would cross 6 with 10, say Verbenas, and 7 and 11 Symmetry Geranium, edged

with Alma. We would be content with Lobelia Paxtoniana round Golden Chain in 14, and then the Arabis will do nicely round Christine in 15. We presume the ribbon-border is placed close to the house, with the flagged pathway in front of it. This can only be advocated in small places, as borders so placed always conjure up ideas of damp and mouldiness in the walls. Such borders, and pots and boxes there also, remind one of a town garden.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

To husband the amount of water that falls to the earth, and prevent the soil from retaining more than is required by the plants cultivated, is of great importance in gardening. This is done by trenching the sound land, trenching and draining tenacious soils, and stirring the surface of both as often as it becomes hardened. This continued hoeing and pulverising the earth among plants has been traced to Jethro Tull; but Tull was no more its author than the writer of this, for he states that he met with these practices amongst cultivators in foreign parts. *Artichokes (Globe)*, prepare a plantation if necessary, by deep trenching and manuring, for if encouraged in this way they will by judicious thinning remain much longer in bearing. Continue the general sowing of main crops according to the state of the soil and the locality. Make small sowings of Borecole, Brussels Sprouts, and Green Savoy; also, full crops of Salsafy, Scorzoneria, Leeks, and Sea-kale. Advancing crops of Peas and Beans should have more earth drawn to them, and some branches of spruce fir or other material should be stuck in on the windward side of the Peas. *Herb-beds*, look over and prick them up, add fresh soil where necessary. Now is also a good time to divide the roots and make fresh plantations. Dress Mint and Tarragon-beds with light decomposed manure. *Potatoes*, plant the main crops. Spinach, Early Horn Carrot, and Stone Turnip should be sown at once on a warm rich border. *Rhubarb*, protect the crowns by straw placed over them. *Sea-kale* in the open ground should be earthed-up to blanch. When the soil is sandy and light it may serve, but should be broken fine before placing it over the crowns, that the heads may not grow crooked. On heavy soils old tan, decayed leaves, or coal ashes are useful substitutes for blanching.

FRUIT GARDEN.

Premising all pruning, training, &c., of trees and fruit bushes to be now completed, and the ground properly forked over between them, attention should be directed to the Strawberry plantations which have generally suffered severely. The beds should be cleared of weeds, and a dressing of rotten dung spread between the rows; it may afterwards be forked-in very lightly so as not to injure the roots. In doing this spread a little soil up to the crown of the plants, which will assist the growth of the new surface roots. Last season's runners should be gone over, and those made firm in the soil which are thrown up by the action of the frost, after which mulch the surface. Destroy all insects before the trees bud. Clear away all scale, &c., using a wash composed chiefly of clay, water, and sulphur on trees liable to the attacks of insects. Prepare for grafting. Begin with Cherries and Plums, and finish with Pears and Apples. Cut the roots of Red Currants if too gross.

FLOWER GARDEN.

There are two modes pursued in the formation of grass lawns, the one is by sowing a selection of grasses, choosing those that are of a short and close growth, and the other is by laying down turf. The sowing of grass seeds is done more expeditiously and economically than by laying down turf, and in after years there will be no annoyances in the shape of Daisies, Dandelions, &c. This is a good time for preparing ground for the purpose. Dig it carefully over, pick out all roots of perennial weeds, rake the surface, and bring it to the level required, give a good treading, and then roll it with a heavy roller to bring the ground to a regular and uniform consistency. Having done this, give the ground a slight stir with the rake, sow the seed, and finally roll. The following are the quantities necessary for an acre. For light soil, *Festuca tenuifolia*, two pecks; *Poa pratensis*, two pecks; *Anthoxanthum odoratum*, three pecks; *Lolium perenne* tenue, two pecks; *Agrostis stolonifera*, two pecks; White Dutch Clover, one peck. For very strong heavy soil the mixture should be, *Poa trivialis*, two pecks; *Festuca duriuscula*, two pecks; *F. ovina*, two pecks; *Anthoxanthum odoratum*, two pecks; *Cynosurus cristatus*, two pecks; *Alopecurus pratensis*, two pecks; White Dutch Clover, one peck. Where turf is in a bad state and difficult to mow in summer, let it be top-dressed with some light soil and some Dutch Clover sown upon it. Herbaceous plants should always form a principal feature in gardens

where the family is resident the greater part of the year. To those who have hitherto grown only the usual bedding-out plants and annuals, and who have to wait till midsummer for a display of flowers, we recommend that they procure a selection of the more showy Delphiniums, Campanulas, Phloxes, Dianthus, and other ornamental herbaceous plants, Lilliums, &c. For planting among shrubs in borders, and for mixed beds, they are valuable, while the fact of their affording a succession of blooms from early spring nearly to Christmas, ought to insure their more general cultivation, particularly where cut flowers and a continuous show of blossoms are essential. The improvement in habit and colour which is annually taking place in the above and other herbaceous plants is an additional inducement for growing them.

GREENHOUSE AND CONSERVATORY.

The weather having become milder fire heat may be dispensed with for hardwooded greenhouse plants, unless the night temperature falls below 40°. At this time, however, and for a few weeks, let the necessary watering and cleaning be done sufficiently early in the day for the air of the house to become dry before evening, and then there will be less danger of the plants suffering from a low night temperature, than when they are exposed to it whilst surrounded with a damp atmosphere. Pelargoniums, herbaceous Calceolarias, and plants of similar growth, should be kept in a night temperature of 45°, which may be increased a few degrees, if early bloom is desired; keep them near the glass, and at a sufficient distance apart to admit the light freely to their lower leaves, which otherwise will turn sickly and fall off. The Camellias intended for flowering late in the autumn should now be forced into wood under a temperature of 60° or 65°. Shade if necessary while making their young wood. Climbers beginning to push should after this time be frequently examined to prevent confused growth. Kennedias, if crowded, should have their shoots thinned. Ipomceas and Thunbergias, being subject to red spider, should be well syringed to prevent that pest gaining ground. Where a large quantity of hardy shrubs is annually forced, either to decorate the drawing-room or conservatory, it is not desirable to pot a fresh stock each season, as a number of deciduous things, such as Roses, Lilacs, Thorns, Honeysuckles, Sweet Briars, &c., may, by proper treatment, be made to bloom for several successive seasons. Select, therefore, the most suitable plants when removed from the house, and give some kind of temporary shelter to gradually harden their foliage. Those cramped for pot-room shift into pots a size larger, using rich turfy loam, and towards the middle of next month plunge them in an open situation in order that the wood may ripen early.

STOVE.

The Hippeastrums and Amaryllids will now be flowering, and will require rather liberal waterings, and will soon want shifting. See that their leaves are preserved from injury. Pot Cape bulbs as soon as the foliage is becoming strong; use chiefly loam, leaf soil, and silver sand. Water must only be moderately applied to recently-potted plants until they become established; their night temperature should be 65°, with an increase of 10° or 15° on bright days. Maintain a moist atmosphere, and give no quarter to insects of any kind. Make cuttings of the various Begonias for flowering through next November and December.—W. KEANE.

DOINGS OF THE LAST WEEK.

GENERAL operations chiefly a continuance of those of last and previous weeks. In the kitchen garden turned over the ground intended for Onions, Carrots, &c., but the ground is not mellow enough yet for sowing. Slightly forked among Lettuces that have stood the winter, and scattered some lime and soot among them. Planted out also more Garlic and Shallots, firming them in little drills about 1 inch deep and 12 inches apart, and then throwing some light charred material over them. Run the points of the fork also among young Onions. Turned up ground on banks for Potatoes. Prepared for planting Jerusalem Artichokes, and as soon as possible will clear a piece of ground to be prepared for Asparagus, as we have been forcing rather much of late. Gave Kidney Beans in a pot more room. Prepared beds

chiefly of leaves for more Cucumbers and Melons, and as the plants will not be ready, will first fill the frame with Scarlet and variegated Geraniums, either in pots or on pieces of turf, to be moved as soon as fresh rooted. The beds will then be forked over and a little addition made, as they are not quite high enough to last the season, and we will then turn out the Cucumbers and Melons from pots in which they will be well established but not stunted.

The weather here being still so cold, and the ground wet and cold, moved the Peas sown on turves and placed between the rows of Potatoes into a colder place, but where they could have a little protection. The slight check given to the roots running all through the turves will hasten rather than otherwise the gathering period. No time should be lost in sowing successions in the open air; and if this cold, wet, snowy weather continue it will be advisable to sow Cabbage, Brussels Sprouts, Borecole, and Savoys, in boxes or pots under cover, and then prick out, so as to have them forward for planting.

Turnips and Carrots.—Will sow Turnips as soon as the ground is friable, and in a few days will sow a bed with Radishes between, where they can be protected from much frost, as a very little frost early in the season, though it does not seem to hurt the plants much, will ever have a tendency to cause them to run to seed, or make the Turnips hard instead of crisp and juicy, as a young Turnip ought to be, and then it is a delicacy. When wanted crisp and very early much north of London they should have the advantage of glass over them, and plenty of air given back and front. Of course such Turnips could not be sold in competition with those brought from Devonshire and Cornwall, but if people in the north will have delicacies of their own growth they must go to the requisite expense and labour. For such an early crop, if the rows are a foot apart, they may be thinned to not more than from 4 to 6 inches in the row, as the plants will be pulled when of a small size, and the largest first, which will give room to the rest. Gave plenty of air in fine days to Carrots under glass. Will sow a bed of Early Horn out of doors shortly. We seldom sow Carrots for the main crop until April, and then a piece about the middle of June, and the end of July for young crisp Carrots, which, packed in sand, are generally better than those sown late to stand the winter. Small ones from the late sowing are generally hard and stringy.

Will sow Parsnips as soon as possible. They do not mind the cold if they can be sown when the ground is nice and mellow, and friable. For these, Carrots, Scorzonera, &c., the ground should be poor, deeply stirred, and what manure is given should be deposited from 18 to 24 inches from the surface. This will insure straight roots. Those who save seed should now select the best specimens for that purpose. Good varieties often become deteriorated by saving seed from inferior specimens. We have seen fine Cucumbers exhibited, and the seed from the variety have a good sale, and but few specimens produced equal to the originals, because every crooked, deformed fruit that would seed was allowed to do so. The finest kinds of Cabbages and other vegetables often deteriorate, not so much from the age of the variety as from carelessness in saving the seed from inferior plants. Seedsmen should look to this, or gardeners at much inconvenience will have to try and save their own seed. Nothing looks better than a quarter of Cabbage with the plants all uniform and not a "rogue" among them; but how often does it happen that the rogues occupy a more than desirable place in the quarter. As the ground is still rather wet will plant another piece of Potatoes where protection can be given them, with Radishes, &c., between the rows.

FRUIT GARDEN.

Pruned trees when we could, and, a severe frost having threatened, stuck some handfuls of rough hay and some branches among the shoots of Apricots, though, as it turned out, the frost was not severe enough to injure the blossom-buds, swelling fast. Moved Strawberry pots in bloom to the best positions for light and air. Provided the temperature is not too high, we do not consider the air question so important until the truss shows. Last year a great enthusiast took us to try and explain why his Strawberry plants would not show bloom. They had been brought from out of doors into a close house of from 70° to 75°. If they had been a "little" closer for a time at 50°, it would have done little harm,

though it is safest, when practicable, to give air at all times. Placed pots of this fruit in every suitable place in vineries, Peach-house, &c., where heat, and light, and air could be given them, bringing the fresh plants in every instance from frames where there was just a little heat, so that much of a check should not be given; for a sudden change from cold to heat is often as prejudicial as a sudden change from heat to cold. In a sunny hour, waved a long thin board, like a fan, over the Peach trees in bloom. In these slightly frosty nights, left all the air possible on the orchard-houses, alike to keep the trees back, and to give any insects that may be left the benefit of the cold. We have not yet been able to set out our second house, and we find that we are behind in many things, owing to extra work out of doors, planting, &c., and the weather, which hindered such work considerably. There must be sharp work to bring up the leeway. In vinery thinned and regulated shoots, and tied down, to keep bunches from being too close to the glass. Cut the remaining fruit in late house; pruned Vines, washed the house and Vines, and painted them. We generally used to tie them along the front of the house, but, to save time in untying and tying up again, after washing them, or painting them with clay, sulphur, soot, and soft soap, we suspended them from 24 to 30 inches from the glass. Having watered the back border with drainings from the farmyard, reduced in strength with warm water, to make it from 70° to 80°, we fresh-surfaced it with soil and a little soot, and old powdered lime, and filled a small stage in the centre with Pelargoniums, and the shelves against the back wall, and the floor of the house, with bedding plants. Here it is but right that we should record

A misadventure from using dry soil, soot, and even old lime, under such circumstances. A little cowdung had been placed on the border before watering, the border being very dry, as we had no water to give it in the autumn, and did not wish to have the house damp in winter. After the watering, and the drying of the surface, and adding a little fresh soil, but not so dry as we wished, we applied the above dry surfacing thinly, for the boxes and pots to stand upon, and as, for the sake of the plants in them we wished the air to be dry about them. Nothing suffered except some nice boxes of *Calceolaria amplexicaulis*, which we found did not quite like the rough treatment we gave to other *Calceolarias* in a cold pit, and which, therefore, we kept, where it was possible to give a little fire heat—in this late vinery, indeed. In clearing the house they were removed to an earth-pit, and protected for a couple of nights; but as we had several times had them nibbled by mice in such circumstances, we returned them into the house, placing the boxes on the floor. In the morning many of the leaves looked as if they had been sprinkled with hot water, or scalded, and we expect that some of the plants will die. The ammonia from the manure water, and the soot together, had been too much for them. The house had a rather strong smell in the morning. Most likely, too, the little lime, which we thought as mild as chalk, and used for its dryness, had some acridity left, and probably, also, some of it was still quick. Among the hundreds, or rather thousands, of other plants in the house, nothing seemed to suffer in the least except these *Calceolarias*. Even a few new sorts of other *Calceolarias* suffered little or nothing. It is right to add that the *Amplexicaulis Calceolarias*, from standing a long way from the glass, and being a little shaded, were a little drawn and tender, in fact we intended topping them for cuttings. We mention the circumstance as a caution, to be careful of the application of soot in confined places. The soot was very fresh and good. We have not a doubt that the injury was entirely owing to the ammonia given off. One of our young men states that he once saw a large frame of nice plants of *Perilla* destroyed in a night from fresh soot having been strewn slightly over the mild sweet hotbed in which they were growing. It is well known that the fumes from manure water in evaporating pans, and the fumes of sulphur from hot-water pipes, that would not incommode Vines and Peaches, would soon curl up the fronds of the more tender Ferns.

ORNAMENTAL DEPARTMENT.

Did little out of doors except routine. Will set to work among herbaceous plants and shrubs as soon as possible. Roses, prune as stated last week. Lately we noticed the layering and pegging-down Moss and Provence Roses. This,

man a generation ago, used to be done with fine effect at Valleyfield, under the management of the late Mr. Stewart, who along with such worthies as the late Mr. Beattie of Soane, McDonald of Dalkeith, McNab of Dalrymple, Bishop of Methven, &c., constituted the aristocratic Scottish gardeners in our boyhood; when Donald studied at Perth when other men slept, and imitated himself under Barnet with the greater advantages of culture which Edinburgh afforded. These Roses were sown every year; the shoots were thinned-out in autumn, leaving from three to five or more of the strongest in each bush. These would generally grow from 3 to 5 feet in length. In autumn the old shoots were cut clean off at ground level and forked over, the points of the new shoots nipped off, and then pegged-down pretty close to the ground, and almost every bud threw up next spring a stubby short flowering-shoot, making almost a carpet of splendid Roses. We have never seen the system so thoroughly carried out since, though it has frequently been acted by ourselves and others. These carpets of ever-cross our memory without bringing to our mind the form of the good, kind-hearted, clever old man who did the pruning and the pegging with a neatness and stic finish that the young blue aprons could scarcely imitate. With all his neat handedness and goodness, our old friend had a dash of the eccentric, which to have prevented him taking a suitable social position. What was rather uncommon then, in his very young days had gone to London, no doubt to obtain a share of the good things that went there; but he did not come back, and ended his days at Valleyfield as a labourer. This story of Roses will not be without interest if it lead our young brethren, who often must live in a little society, studiously to refrain from cultivating in a manner, address, or action, as this eccentric caused the wreck of the social standing of many a man, besides good, happy Robert Horn.

plenty of air when the weather would permit to raise in cold pit to fit them for going out of doors for the protection of mats, branches, &c. Protected from rains that the soil may be dry for Geraniums. Gave manure water to Cinerarias, Primroses, Azaleas, &c., the latter weak. Looked to forced bulbs, &c. Proceeded with potting all kinds of the useful in the shape of Strawberries contending space with flowering plants and bedding plants. and Caladiums that were fresh potted and placed on hotbed, and find they will soon want fresh potting. are well encouraged now, the leaves will be sure to be afterwards. Started Begonias, Gesneras, Achillea, below Vines, and when fairly in leaf, or showing fresh pot. Proceeded with cuttings, and sowing and half-tender annuals, in the way frequently adopted which we suppose we must soon repeat if we ease some of our readers, who tell us that we write were readers from the beginning, and also that we neglected window gardening of late. In the meanwhile would say to all intended cultivators of the *Perilla aranthus melancholicus ruber*: Sow the seeds and a mild sweet hotbed before the middle or the 25th month, and harden-off as soon as possible. If larger and stunted, they will not thrive so well as younger and stunted. The *Amaranthus* makes a fine shade for *Perilla*, and few plants soften down so well the creamy yellow of the *Calceolaria amplexicaulis*. Our rather too cold and exposed for it. If seedling, &c., are up, be careful to prick off before they be together and damp off.

plants much the same as in previous weeks. We particularly wish the growers of fine *Pelargoniums* to lift to give air so early in the morning that the leaves be dry before the sun strikes them, and also that the soil do better if the pots are set on boards, than on other substance; ashes, earth, sand, &c., being the best.

TRADE CATALOGUES RECEIVED.

Seed Company, 68, Welbeck Street, Cavendish Square, London.—General Price Current of Farm Seeds.

J. C. Wheeler & Son, Gloucester.—Wheeler's Little Book on Grasses, and Priced List of Farm Seeds.

William Paul, Waltham Cross.—Spring Catalogue of New Roses, Geraniums, Hollyhocks, Dahlias, &c.

COVENT GARDEN MARKET.—MARCH 11.

The supply of Greens and other out-door produce continues rather short, and the quotations of last week are fully maintained. Apples are still very plentiful, other fruit sufficient for the demand. Forest Strawberries are selling at 2s. 6d. per ounce; and some new Grapes may also be had. Of the old there is still a good supply. Continental importations are well kept up, and comprise the same articles as mentioned in previous reports. Of Potatoes there is a heavy stock.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	2	0	to 4	0	0		
Apricots.....	do.		0	0	0	0			
Cherries.....	lb.		0	0	0	0			
Chestnuts.....	bush.	14	0	20	0				
Currants, Red.....	½	sieve	0	0	0	0			
Black.....	do.		0	0	0	0			
Figs.....	do.		0	0	0	0			
Filberts.....	100 lbs.		40	0	0	0			
Cobs.....	do.	50	0	60	0				
Gooseberries.....	½	sieve	0	0	0	0			
Grapes, Hamburgs.....	lb.	7	0	12	0				
Muscats.....	do.	0	0	0	0				
Lemons.....	100		5	0	10	0			
Melons.....	each	0	0	0	0				
Mulberries.....	punnet	0	0	0	0				
Neotomas.....	do.	0	0	0	0				
Oranges.....	100		5	0	10	0			
Peaches.....	do.	0	0	0	0				
Pears (kitchen).....	bush.	5	0	10	0				
dessert.....	do.	3	0	6	0				
Pine Apples.....	lb.	10	0	12	0				
Plums.....	½	sieve	0	0	0	0			
Pomegranates.....	each	0	0	0	0				
Quinces.....	½	sieve	0	0	0	0			
Raspberries.....	lb.	0	0	0	0				
Walnuts.....	bush.	14	0	20	0				

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	each	0	4	to 6					
Asparagus.....	bundle	8	0	12	0				
Beans Broad.....	½	sieve	0	0	0	0			
Kidney.....	100		2	6	4	0			
Beet, Red.....	do.	1	0	3	0				
Broccoli.....	bundle	3	0	3	0				
Brussels Sprouts.....	½	sieve	3	0	4	0			
Cabbage.....	do.	0	0	0	0				
Capicums.....	100		0	0	0	0			
Carrots.....	bunch	0	7	0	10				
Caiflower.....	do.	2	0	6	0				
Celery.....	bundle	2	0	3	0				
Cucumbers.....	each	1	0	5	0				
Endive.....	score	2	6	3	0				
Fennel.....	bunch	0	3	0	0				
Garlic and Shallots.....	lb.	0	8	0	0				
Herbs.....	bunch	0	3	0	0				
Horseradish.....	bundle	2	6	4	0				
Leeks.....	bunch	0	3	to 6					
Lettuce.....	do.	0	0	0	0				
Mushrooms.....	pottle	1	6	2	6				
Must. & Cress.....	punnet	0	2	0	0				
Onions.....	bushel	6	0	3	0				
Pickling.....	quart	0	6	0	0				
Parley.....	½	sieve	3	6	5	0			
Parasips.....	do.	0	9	1	0				
Peas.....	quart	0	0	0	0				
Potatoes.....	bushel	2	6	4	0				
Radiishes.....	bunches	1	0	2	0				
Rhubarb.....	bundle	0	6	1	0				
Savies.....	do.	3	0	0	0				
Sea-kale.....	basket	1	6	3	0				
Spinach.....	½	sieve	4	0	6	0			
Tomatoes.....	½	sieve	0	0	0	0			
Turnips.....	bunch	0	5	0	0				
Vegetable Marrows.....	do.	0	0	0	0				

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

LILIIUM LANCIFOLIUM RUBRUM CULTURE (G. Wagner).—A six or seven inch pot will do for a strong bulb of this Liliium. Drain the pot well, and on that place some rough peat and loam, filling the pot about half full. On this set the bulb, and just cover all except the point, and then set the pots under your stage on the floor, and give little water until the stem begins to move; then bring them into the light, and earth up as the stem grows. After the end of May a sheltered place out of doors will suit them as well as the greenhouse or cold pit. When growing freely they require plenty of water.

SEEDS FROM NEW ZEALAND (P. C. A.).—*Pittosporum tenuifolium* is an evergreen greenhouse shrub, growing about 3 or 4 feet high, having, if we remember right, yellowish white flowers in April and May. It does well in a compost of sandy peat two-thirds, and sandy loam one-third, with a free admixture of silver sand. *Edwardsia grandiflora* is a deciduous or sub-evergreen shrub, hardy in some situations against walls with south or south-west aspects, but is at the best a half-hardy plant requiring protection in winter. It has yellowish flowers in May and June, and attains a height of 6, 10, and occasionally 12 feet. It requires a sandy peat soil. *Podocarpus ferruginea* much resembles a Yew, with much wider leaves. It is a half-hardy tree. *Eucalyptus globulus* is an evergreen tree, attaining a height of 100 or more feet, and is not hardy, nor are the others named, all being half-hardy plants, and doing best in a cool greenhouse, or a house from which frost is barely excluded. We do not know the others sufficiently to describe them. The seeds of all would be best steeped in water at 100° for twenty-four hours before sowing, which may be done at once in a compost of sandy peat and loam. Cover the seeds lightly, no deeper than their own diameter, place the pots in a little bottom heat, and when the seedlings are fairly up gradually harden off and grow on in a greenhouse, potting them singly into small pots when sufficiently large to handle.

ALLAMANDA GRANDIFLORA AND IMPATIENS HOOKERIANA CULTURE (*A Dartford Reader*).—The Allamanda had better be potted at once, giving it a liberal shift, say from an 8-inch into a 12-inch pot, draining the pot well. Impatiens Hookeriana should be potted, when it commences to grow, in a compost of turfy peat, loam, and leaf mould, in equal parts, with a free admixture of silver sand. It should be grown in a moist atmosphere, be kept near the glass, and never have a sodden and sour soil about it. Whilst it is growing the soil should be kept well supplied with water, and good drainage should be provided; but when it has bloomed it should not be so freely watered, and water should be gradually withheld until the plant goes to rest, when the soil should be kept moderately dry until growth recommences. It is a stove plant.

DATURA ARBORÆA PRUNING (*M. F.*).—This fine old plant should have the shoots well cut in, and if the wood was well ripened they may be cut to two eyes, always pruning so as to secure a well-shaped plant.

FERNERY ADJOINING DWELLING-HOUSE (*M. J. P.*).—Judging from your plan, we think your proposed situation for a fernery for half-hardy Ferns would answer admirably; but instead of having it 8 feet square we would carry it 4 feet towards the garden, or to the end of the house in that direction. The circle, we presume, is intended to show the position of a pipe to conduct the water from the roof, which we would carry into a cistern within the house, so as to have water always at hand ready ailed to water the house. In the direction of the door from the house it might be extended 4 feet more, making it 16 feet long, and by adding 2 feet to the width there would be room for a walk 4 feet wide for access to the garden. We would have the walls of brick or stone, to correspond with the house, no front lights, a lean-to roof, and glass ends. Two lights or windows, one at each end at the highest point, and hung in the middle, would be ample ventilation, and there would be a saving in having the roof without moveable lights. The front might consist of rock stones as high as the wall, and extending into the house a distance of 3 feet, and with a little taste in the formation this would be a pleasing feature. The openings between the stones being filled with a suitable soil, would hold more and a greater variety of Ferns than four times the space were it shelved or staged and the plants grown in pots; the rockwork would be, besides, a much more natural feature. Opposite the drawing-room window you could introduce a dropping well, small cascade having water dripping over the stones, or a fountain with a basin for gold fish. This would be an admirable place for the less hardy and more desirable kinds of the British and hardy exotic Ferns. The rockery would extend along the front and both ends of the house, allowing for the door at one end as proposed. A three-foot walk next this will leave a space of 4 feet at back to dispose of. Were it not contiguous to the house we should have no hesitation in forming a rockery there to correspond with that in front, and this would look best though it might render the wall damp. We should therefore advise you to have a stage there, and grow the plants in pots, taking the hot-water pipes beneath it. If the space at back were formed into a rockery we would not heat it at all for half-hardy Ferns, there being many of the British and hardy exotic Ferns that would do well in it. With hot-water pipes under the stage you could grow many greenhouse Ferns on the stage at back, and the hardier ones in front planted in the rockery. Provided Ferns have light they do not need sun, and your house would require no shading in summer—in fact it is just the place for a fernery, and is calculated to give twice the gratification of a Warden case, which, however, is very well when there is no room for anything larger.

MANURING FOR POTATOES (*A Beginner*).—Give the ground, previously to digging, a heavy soaking with the contents of your cess-pool; and if the plants during their early growth seem weakly, pour another good soaking between the rows, and repeat it after a fortnight if apparently needed. In a poor soil we should prefer this treatment to a heavy application of stable manure.

VINES IN POTS BLEEDING (*W. S.*).—You have pruned your Vines after they had commenced growing. If not started much move the pots to a colder place to arrest the flow of the sap, then take a hot iron and scorch the points of the shoots, and then dab them with red or white lead as soon as it is done. A little oozing will do no harm, but a free flowing will weaken the Vines. As soon as the leaves break they will take up all the sap.

FLOWER-BEDS (*A Subscriber to the Journal*).—We think your design will look very well; but as your four beds in the centre are yellow Calceolarias, and the four beds next them are Lobelia, edged with Cerastium, we would be inclined to continue the same system with the four outside or larger beds—that is, we would make each purple, white, and scarlet; or two might be purple, &c., and the cross-balancing two malberry, white, and scarlet. These would look very nice, either in rows of colour, or even if the colours were mixed. Keeping the rows distinct in these large beds would look most artistic. If wide enough for five rows we would place purple in the middle, white round it, and scarlet outside.

WEDDING BOUQUETS (*A Constant Reader*).—In that for the bride there should be little but white, the exception being a little dressing of Forget-me-not, Lobelia, &c. At this season white Camellias, Epacris, Lily of the Valley, white Primroses, Deutzias, &c., will be in demand, and of course will vary according to the season. For bridesmaids, &c., the colour is not so particular, but white should form a large portion of their bouquets. We may before long refer to bouquet-making, but a glance at the shops in Covent Garden Market would tell you more than a long article. Our coadjutor Mr. Robson has much experience in this matter, and may be induced to help.

BULBS DONE FLOWERING (*Thoni*).—You had better keep the Hyacinths, Tulips, and Narcissus as long in the greenhouse after flowering as you can so as to encourage the foliage, then place them for two or three weeks in your cold house, and then plant out of doors, and shade and protect the foliage a little at first. The Tulips if so treated will bloom next season, and many of the Narcissus will force, but the Hyacinths would be better of a season in a flower-bed before being forced again. Everything depends on giving no check to the foliage until it naturally turns yellow. Your tuberoses would have done better if treated as Hyacinths. It was wrong to keep the soil so dry. If the pots had been covered over the dryness could have been prevented. If you could plunge the pots in a very slight soother, say about 65° to 70°, and cover the bulbs 2 or 3 inches deep, we have no doubt the bulbs would start strong if they are in good condition. We should be glad to have an account of your gas apparatus. We agree with you that for an apparatus so heated copper or tin pipes are better than cast iron, but the latter we believe to be the most economical as to lasting, whilst the copper, &c., are the easier heated, but do not keep the heat so long.

BLAZE OF SCARLET (*J. N.*).—Good old plants of Tom Thumb Geranium will not be surpassed by anything else for a blaze of scarlet in your window.

STRIKING CUTTINGS OF MRS. POLLOCK GERANIUM (*E. T., Amateur, Wills*).—Mrs. Pollock, like most Geraniums, may be raised from leaves with the eye attached, or, in other words, from eyes. Take the cuttings from the plant, and cut transversely below the lowest leaf, and then, placing the knife about half an inch above the eye, cut the stalk in a sloping direction towards the base of the shoot. The leaf is not removed, and the eyes having a flower-stalk opposite the leaf are of no value for the purpose, as there invariably is no eye at the base of the leaf. The large leaves only are available for forming leaf cuttings. The extremities of the shoots should be inserted, like ordinary cuttings, with one joint in the soil, and the growing point above. There is this advantage, in propagating Geraniums from leaves, that the lowest leaves, usually cut away in preparing the cutting for insertion in the soil, may be converted into leaf cuttings. The cuttings being made as described, drain the cutting pots effectually, and fill them to within half an inch of the rim with sandy loam, leaf mould, and silver sand in equal parts. A little silver sand is then placed in the pot, a quarter of an inch or so, and the cuttings inserted about half an inch deep, each leaf being tied to a small stick, with matting round the footstalk, to maintain it in an erect position. A slight watering is then given, and the pots plunged in a bottom heat of 76°, a top heat of 60° or 70° being afforded. The frame having a moist atmosphere, there is little necessity to water; none should be given so long as the soil remains moist, and the less water needed the better, as the great evil is the liability of the footstalk of the leaf to rot, and the consequent destruction of the eye before a callus is formed. Shade is given for a few days, until the leaves are able to bear the sun; and in this position they remain until the shoot from the eye appears, when they are gradually hardened-off, and finally potted-off singly in small pots.

GERANIUMS—VERBENAS (*Yorkshire*).—Best two white *Variegated Bedding Geraniums*: Flower of the Day, Queen of Queens. Best golden ditto: Mrs. Pollock, Mrs. Benyon. *Bedding Geraniums*: Clipper, Miriam, Editor, Lord of the Isles, Herald of Spring. *Nossegay*: Cybister, Stella, Osmian. Fifteen good *Verbenas*: Géant des Batailles, Foxhunter, Madame Matras, Fantasia, Admiral Mitford, Faust, Beauty. General Simpson, Lord Raglan, Mrs. Holford, Madame Lefebvre, Nemesis, L'Avenir de Ballet, Peep o' Day, Ruby King.

POTTING ROSE CUTTINGS (*Felirstone*).—The cuttings inserted in a frame last July, which you wish to remove to your new garden, had better be potted now, and returned to the frame, keeping close for a short time, and then hardened-off by the time you remove. They will remove much more safely than were they taken up and planted in the new garden at once, planting them out in May, with the ball entire.

SIZE OF POTS AT FLOWER SHOWS (*A Subscriber*).—There is no settled rule among horticultural societies as to the size of pots in which plants shall be exhibited. It would generally militate at first against the success of an exhibition if the size of pots all over were to be individually of so many inches in diameter; but if the size of pots were restricted to 8 inches in the case of some things, as Cinerarias, Calceolarias, Geraniums, &c., it would be a better test of the relative skill of the exhibitors, and also render it little easier for the judges to decide as to the merits. We recollect being a little in doubt as to Cinerarias in seven-inch pots, and great bushes in 14-inch pots, but on moving the moss garnishing we found three plants in the large pots, so that the exhibitor showed eighteen instead of six plants. In a small country flower show it would not be wise to restrict too much, but the majority of the members must decide. If you want more heat add to the flow-pipe by all means. We have seen four or five pipes placed horizontally as flows and one to act as a return. The flows will be about the same temperature.

NETS OVER WALL-FRUIT TREES (*A Subscriber, Ballinasloe*).—Keep the nets over the trees until all danger of frost is past. If your trees are vigorous they need no liquid, or any other manure.

PUDDLING WITH DRY CLAY (*N.*).—Our own experience coincides with the advice given by "UPWARDS AND ONWARDS," second column, page 188, as to ramming hard dry clay outside the wall of a tank. For manure water or sewage water only such ramming will often be effectual for holding water without any other wall whatever—at least so long as it is covered by water. Being placed inside, or fronted by a wall of 4½ inches built with cement, the dry clay, but wet enough to be rammed, would answer for such a purpose much better than wet puddling.

STOPPING CRACKS IN CEMENT (*Idem*).—In clay grounds where the tanks are large, though built in the usual manner with brick and cement, extra wetness and extra dryness in the surrounding soil will affect the walls at times and cause fissures and cracks, through which the water will escape. In such cases the cracks are generally too small to admit enough of cement to make all sound, but if the opening is chipped on both sides, say for an inch or more of an opening, and the sides are left rough, and these are well wetted before the application of the cement, we never found any difficulty in the matter whatever; and so far our experience favours that of the writer, and is opposed to the opinion of the plasterer. A small opening, say of an eighth or a quarter of an inch, cannot be stopped so efficiently. The mode of connecting the pipes by means of a one-inch lead pipe, page 177, is merely given as a matter of economy. It would be better if all were uniform; but the small connecting-pipes do little to arrest circulation. We have heated large tanks by taking a one-inch lead pipe from a four-inch flow-pipe, even though the inch-pipe was regulated by a common bear tap, to let the heat in when desirable.

FLOWER-GARDEN PLAN (*S. S. S.*).—The design is so pretty that we cannot well improve it, and of the planting we may say the same. To make the plan complete, however, the two ends should be chain-bordered, as well as the sides, if the position will admit of it, and then an opening could be left at each end in the centre. The little circles might also be planted with small upright evergreen shrubs, &c. No fault can be found with the arrangement of each of the four scrolls, but it is difficult to please in dividing such scrolls into separate colours. For another season it might be well to adopt a simpler arrangement, and so to plant the centre with scarlets and white, and the chain-borders with the same, that the four scrolls might be crossed with pairs of yellow and pairs of purple. This would give greater ease, repose, massiveness, and simplicity, but not the variety that you will gain by your mode of planting.

NAMES OF FRUIT (*R. H. A.*).—Your Apple is *Rymur*. (*Thorn Park*).—1, Unknown; be good enough to send us two or three more specimens;

2, Autumn Pearnain; 4, Herefordshire Pearnain; 5, Tulip; 6, Sweeney Nonpareil.

NAMES OF PLANTS (Olerious).—1, *Lastrea dilatata*; 2, *Lastrea Filix-mas*; 3, Tree young, perhaps *Hypolepis tenuifolia*; 4, *Blechnum occidentale*; 5, *Pteris serrulata*; 6, *Polystichum angulare proliferum*; 7, *Gymnogramma*

ochracea; 8, *Doodia caudata*; 9, *Lastrea Filix-mas* young; 10, 11, *Selaginella*, but impossible to name from such scraps; 12, *Pteris hastata macrophylla*. Your misnamed plant is *Aspidistra lurida variegata*. (L. S. D.)—1, Apparently a sterile frond of *Lomaria Patersonii*; 2 and 3, *Asplenium viride*; 3, *Selaginella rubrocaulis*; 5, *Asplenium labeilatum*; 6, *Asplenium marinum*.

METEOROLOGICAL OBSERVATIONS in the suburbs of London for the week ending March 11th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun. 5	29.579	29.403	48	28	42	43	S. W.	.08	Clear; drizzly; fine but cold at night, slight frost.
Mon. 6	29.377	29.176	41	29	42½	42½	S. W.	.02	Fine; cloudy; overcast at night. [in the night.
Tues. 7	29.574	29.479	45	21	42	42½	W.	.06	Cloudy, cold, and damp; rain; very cold wind; sharp frost.
Wed. 8	29.765	29.697	44	30	42	42	N. W.	.02	Overcast, some sleet; dusky white clouds; fine at night.
Thurs. 9	29.950	29.879	46	25	42	42	N.	.00	Cloudy and cold; clear and cold; overcast; slight frost.
Fri. 10	29.980	29.884	46	34	42	42	N. W.	.09	Fine; cloudy, with brisk cold wind; cloudy at night; rain.
Sat. 11	29.914	29.820	44	31	42	42	N. W.	.05	Cloudy and cold; showery; cloudy at night.
Mean	29.733	29.517	44.71	28.29	42.36	42.29	.....	0.32	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE LAWS OF NATURE

IN RELATION TO POULTRY KEEPING FROM A COMMERCIAL POINT OF VIEW.

(Continued from page 183.)

3. *Are the eggs not affected by the heat whilst being packed?*—Although the jars are placed in boiling water the internal temperature never exceeds blood heat, and as eggs are not affected by that temperature, which is the same as that at which they come from the hen, it becomes only necessary to avoid packing the eggs against the jars without a lining of cocoa-nut refuse, which ought to be perfectly dry and used warm for packing.

4. *How can you tell when a jar is air-tight?*—To ascertain whether a jar is air-tight when empty is easy enough; it is merely necessary to fill the jar with boiling water, and when thoroughly warm to empty out the water, then close the jar quickly with the air-tight cover, and place it inverted in a tub of cold water. The air in the jar, thus rarified, will be condensed by the cold water. If not perfectly air-tight some water will find its way into the jar, which can be ascertained by opening the latter a few hours afterwards. This test, however simple, cannot be applied to filled jars as it would be necessary to open the jars again. Now, this very same question I put to several pickling firms, and obtained the unsatisfactory reply that they consider when jars are air-tight when empty they will be equally so when filled. This, however, cannot be depended on as the cover may fit in one place and not in another, or it may not be screwed down so much at one time as another.

5. *Can you at any period ascertain whether the jars continue air-tight?*

6. *Which are the best air-tight jars, glass or stoneware?*

These two questions I will endeavour to answer under one head, and to prevent my being considered to advocate one principle more than another from an interested motive, I must inform my correspondents that to most scientific men and poultry-breeders it is well-known that egg preserving has formed the study of some of the most eminent chemists in Europe, and that until I published, through THE JOURNAL OF HORTICULTURE, my simple and yet the only truly effective mode of preserving eggs for any length of time no satisfactory means had been discovered. The intense interest this discovery has created throughout England has induced me to ascertain which of the professed air-tight jars are really so, in order that the public may not lose their confidence in so important a discovery on account of the jars not being to be depended on. Through the kindness of an eminent firm in the pickling trade I have been enabled to make experiments with the various so-called air-tight jars, few of which really were so, and all without exception objectionable on account of their construction. Then there came another important consideration: how can it be ascertained, when the jars are filled, whether they are air-tight, and how long they will remain so?

This, of course, was a perfect impossibility with the jars as at present manufactured.

These important deficiencies in air-tight jars for preserving eggs have led me to invent a jar purposely for egg preserving, and which jar is not only perfectly air-tight, but it will show at a glance whether it is so, and how long it remains so, by means of its patent pneumatic self-indicating cap. I have every reason to believe that these jars will remain air-tight for any number of years, and that the eggs preserved in them will remain as fresh as on the day they were laid, and fit for hatching and the breakfast table. Now, although such jars can also be made of glass, which would have the advantage of showing the eggs, yet when it is considered that glass is liable to crack when put into boiling water, particularly during cold weather, it is my opinion that glazed stoneware is preferable.—G. K. GUYLIN, C.E.

POULTRY JUDGES.

I READ now and then, in your paper and elsewhere, of a certain Poultry Club which is to dominate over local associations in much the same way as monarchy did over feudal potentates, and the change is, doubtless, a good one in principle.

At the same time I do not clearly gather the scope of the Club's proposed operations. Apart from the establishment of a standard of excellence (which the Club hopes to settle hereafter, and which I hope it may, and that judiciously, so as to obtain general assent), the great point made seems to be the putting down of "dealer judges," or, as a semi-official article has said, "persons who sell birds." Now, in horticultural shows, the amateur and nurseryman's classes are very different; but in the matter of poultry the amateur who does not sell off his surplus stock whenever an adequate price is forthcoming, is, I imagine, a rare variety of the fancier species. Now, if the habit of selling birds infallibly perverts the moral sense, I doubt whether entire rectitude be consistent with even occasional bargains. Why not disqualify at once all who keep birds the value of which would be affected by competition, including, of course, all whose relatives or friends may be in that predicament? Living in an out-of-the-way locality, I know nothing about the secret history of the matter; but it seems to me invidious to throw reproach on a class, and, if as I suppose, it be a very limited class, rather an ignoble object to put in the foreground of the programme.

There is no royal road to the selection of judges. Character—that is, recognised skill and integrity—is the growth of experience and publicity. There are different kinds of people—fast and slow, bold and timid, vulgar and "genteel." Classification is an excellent aid to natural history, but none at all in choosing poultry judges, any more than the colour of their hair.

As to the wisdom of special arrangements to prevent judges' acquaintance with the ownership of the pens, any mark or indication found on a bird at once, as I am told, disqualifies it; and it is proposed to mark the pens for judging apart from the numbers in the catalogue, which

might be communicated by a knavish exhibitor to give a cue to a knavish judge. But surely the parties in collusion, if such things be, would be muffs also not to evade any such precaution. It is not necessary to know the number, for a man may know the birds. Is not broad daylight the best preventive to cheating—viz., publicity and free discussion among the poultry-loving public? and does not the reliance on secrecy lead to a kind of countermining—a trial of skill between the party that insists on keeping a secret and the one that is so much the more eager to find it out?—T. T.

EXTRA PRIZES FOR BUFF COCHIN-CHINAS. (CIRCULAR.)

THE additional prizes of silver cups to Buff Cochins at the late Birmingham Shows having proved of such importance to the breeders of this variety of birds as to make it most essential that these extra prizes should be continued, in fact extended, I have consulted some of the most influential breeders upon this subject, all of whom have promised to subscribe £2 each; and I may add that in consulting Captain Heaton he most liberally promised that if £20 could be collected he would give £5 himself to make the amount £25, to be divided as follows:—viz., £5 silver cup to each old and young birds, £5 cup for the best single cock, £5 cup for the best pair of hens, and a £5 cup for the best pair of pullets. Thus divided, all breeders would have a good chance of obtaining a most desirable honour; and to enable this to be done the amount must be subscribed before the Birmingham prize-list is published, so that the extra prizes may appear in the same, and gain publicity in the catalogue at the time of the Show—a matter so important, and which could not be done last year in consequence of the amount not being subscribed until after the prize-lists were published. It is proposed that these prizes shall be given for general competition, and you being a breeder and exhibitor of Buff Cochins will, I am sure, estimate the importance of these extra prizes, and forward your subscription at once, that the necessary amount may be made good. Mr. Lythall, the Secretary of the Show, has kindly offered to receive all subscriptions and provide cups, which will be presented to the successful exhibitor on the first day of the Show.

Your prompt attention will oblige yours, most respectfully,
HENRY TOMLINSON, *Balsall Heath Road, Birmingham.*

[It will be evident to our readers, from the circular issued by Mr. Tomlinson, that those amateurs who feel an interest in breeding Cochins are busily exerting themselves to offer some additional valuable prizes to be competed for in conjunction with those appointed by the Birmingham Committee at the Show to be held in Bingley Hall next December.

When it is borne in mind these "five extra silver cups for Cochins" are to be allotted to a variety of domestic poultry, perhaps the most popular and useful of any, we cannot doubt but that the amount required will be readily obtained, particularly as we understand more than half the money requisite is even already in hand. It will, however, be necessary for subscribers to give notice of their intention to become aiders of this movement as speedily as possible, for by so doing it will allow of a list of the additional premiums appearing in the forthcoming Birmingham prize schedule to be issued in about a month hence; and it will also make it certain that the names of those parties who may eventually prove successful will be printed in the Birmingham catalogue.]

SCHEDULES OF POULTRY SHOWS.

SURELY your correspondent "Y. B. A. Z." wrote the postscript to his article without reflection. If I received a catalogue or list of prizes of the Bradford Show, which contained no prizes for Brahmas, and the Committee afterwards resolved to make a class for those birds and to offer prizes for them, ought not the Secretary at once to have forwarded me an amended catalogue? The catalogue was sent to me without any application from me; and, as such, the Secretary of a poultry show keeps, or ought to keep, the names of those to whom prize lists have been forwarded, and he ought to have sent an amended one to all who had received the first.

At all events, some Brahma breeders had amended catalogues sent them, otherwise there would have been no exhibition of that class, and no prizes awarded. The effect of sending them only to a few instead of to all certainly limited the competition and leaves it open to remark. Poultry Committees and Secretaries should be like Caesar's wife, not only without fault, but above suspicion.—J. WRIGHT, *Church Street, Woodbridge, Suffolk.*

POULTRY-KEEPING FROM A COMMERCIAL POINT OF VIEW.

"Nemo," the defender of "C. S. J.," has my best thanks for his kindly lecture as to what is required to establish the success of anything now-a-days. I do not find fault with his opinion as regards the profits poultry breeding will yield, and in the absence of any actual statistics of my system on a large scale, I can only reiterate what I stated in my reply to "C. S. J." There are, however, a few assertions with which I beg to differ, even with "Nemo."

1st. Were it not for sanguine minds few improvements would ever be carried out, and were even the minimum profits given there would still be found many persons who would with just as good reasoning reduce it below zero.

2nd. The artificial hatching can be entirely dispensed with in my system, as for every 1000 hens, I can rear at least 10,000 chickens, and under any circumstances it will only be resorted to to hatch chickens when hens have ceased to be broody. As to whether my system of artificial hatching is superior to that of Cantelo or any other, I may state that I do not claim any originality, but rest the success only on the well-known law of a uniform temperature at which there is not the slightest difficulty to hatch chickens, and this uniform heat can be maintained either by manual or mechanical means, which are well known to engineers, and which will be described in some subsequent Number of this Journal, under the laws of nature in relation to poultry-keeping. The failure of Cantelo, and others, cannot be ascribed to the hatching, but solely to the rearing of the chickens. Now, this is my system, and on it I rest the success of poultry-breeding, and though I do not intend to rely on artificial hatching, yet I shall entirely depend on artificially rearing all the chickens, whether hatched by a hen or by an apparatus.

3rd. My system of breeding poultry and its profits can no more be judged by the present mode than railway travelling when first projected could from the old stage coaches. For its success it will require a staff of servants, and a subdivision of labour, then a good disciplinarian as superintendent, and the whole will form a piece of mechanism which will work with the greatest precision, and afford such statistics as will surprise sceptics. To carry this out is a mere matter of money and will, whether by a private individual, or a public company; but the idea of an association of working partners to attend to fowls, is simply ridiculous, and I doubt whether, if they could be found, they would long remain a united family.

4th. If "Nemo" will take the trouble to read the article on natural hatching, No. 198, he will find that I advocate natural hatching and artificial rearing. Has it ever occurred to him in estimating the annual profit of a hen, to charge to her credit the hatching of one or two broods, which surely is more valuable than the number of eggs she could lay in twenty-one days?—Geo. K. GYELIN, C.E.

THE IRISH EGG TRADE.—At the annual *soirée* of the butter and egg merchants of Glasgow, Mr. Patrick Meehan, who occupied the chair, mentioned the following particulars regarding the import of eggs from Ireland into Glasgow.

"That the butter and egg trade is becoming of considerable importance there can be no question. I will only refer to one item in it. Both Derry companies have run six steamers weekly, carrying each an average of 100 boxes of eggs; and I think we may safely allow 100 boxes from Cork, Dublin, and Belfast—in all, 700 boxes per week, or 36,400 per year. The average price per box is £3, so that the annual value of the eggs imported into this city alone is little short of £200,000."

GOLD AND SILVER PHEASANTS.

We shall feel obliged if our readers and contributors will inform us when the earliest Golden and Silver Pheasant's eggs are laid. It will also be giving much real pleasure if they will note the advent of our birds of passage and our warblers. Many of us who, perforce, are obliged to live in town or towns, have our reminiscences. We recollect the note; we know the spot where we used to see the first Swallow; to hear the first Nightingale; and the "*Mal du pays*," is sufficiently strong upon us, to enable us to enter fully into the feelings of the emigrants in Australia, who made room for each other round the door of a house in Melbourne where the first Skylark was to be heard.

DOE RABBITS NEGLECTING THEIR YOUNG.

I KEEP a variety of doe rabbits, and after they had many young ones, all of which lived and did well, I was greatly surprised to find that the next time they had litters the young ones were scattered all over the hutches and left to die. As this was done by all of them I concluded that it was owing to the way in which they were fed, and so it proved. I think if "J. N." (your correspondent) feeds them in the following manner he will not be disappointed:—Oats and bran twice a-day, a little more than they can eat at the time, and cabbage leaves. Offer the does water, and when they have young ones give in addition a spoonful of fine middlings mixed with pea chaff and water.—S. B.

SWARMING VERSUS STORIFYING.

WHEN your correspondent "J. E. B." in No. 192, communicated his experience "that hives permitted to swarm, if forward, will yield a larger harvest of honey than they would do if kept on the conservative principle," I expressed in No. 196, the opinion that either the worn-out condition of the queens of his storified hives, or something radically wrong with their management, had induced this invidious comparison.

Subsequently (in No. 200) "J. E. B." was good enough to favour us with the history and mode of treatment adopted with his three storified hives A, B, and C, at the same time quoting Dzierson in support of his opinion. If the system of management of your correspondent be a counterpart of that recommended by his celebrated continental authority, I, too, must subscribe to the doctrine that the subdivision of hives augments the honey harvest in such circumstances.

I have no wish to unduly criticise the manipulations of any of the brotherhood, the object of "our Journal" being, as I understand it, that each correspondent is at full liberty for the general good, to detail his system and experiences, be they successes or reverses, and, indeed, so far has this been carried out in "our corner" as to elicit a favourable comparison with our neighbours of the poultry and floral departments. "J. E. B.," however, expresses a wish "for any information," and I subjoin the following remarks, with the sincere hope that they may assist him "to obtain a better result for the future."

First, then, as to queens, your correspondent seems quite alive to the importance of having young and vigorous ones at the head of his stocks, and they do not seem to have been much at fault. I may here remark that I quite agree with "*A LANARKSHIRE BEE-KEEPER*" that queens of non-swarming colonies are oftener changed than is generally supposed. I had an opportunity of seeing in a strong storified stock of a friend last summer twelve months the queen, whose tattered wings and decrepid condition bespoke extreme old age, yet notwithstanding this the stock did remarkably well last season—a proof that this venerable monarch had been supplanted by a youthful rival.

The grand error of your correspondent, and one which is, I am afraid, too common in localities where the storifying system is neither practised nor understood, is a too limited breeding space. Even authorities are prone to fall into a like error. I pointed out before in one of the early Numbers of your new series in illustration of this, the absurd disproportion of Nutt's celebrated collateral hive, the central box, or "*Pavilion of Nature*" as he styled it, so circum-

scribed as "11 or 12 inches square by 9 or 10 deep," and yet the population hatched out in this puny affair was expected to fill with pure honey two end boxes of similar size besides three bell glasses. Are the many complaints of want of success with this hive to be wondered at? No ventilation in such circumstances could prevent either brood in the end boxes or the escape of swarms. By the way, with a good lengthy low entrance and fair shelter from the hot sunshine during the working season bees are themselves the best ventilators.

Need we go further for a second example than the advertising columns of "our Journal?" The familiar illustration of Messrs. Neighbour's shallow straw, so called "cottage hive," with its three bell-glasses, to the eye of the practical storifier is nothing more than a lady's pretty toy.

Is it right, nay more, humane, to cramp, and consequently impair, the energies of a good queen within the limits of a single box, keeping her wandering in despair over the combs, in vain seeking in her circumscribed breeding space vacant cells to unburden herself of her eggs? Can it be wondered at that she should, under such circumstances, quit the hive with a swarm in disgust, even although her condition be such as to cause her to drop to the ground a short distance from her hive, or, more generally, contrary to her instincts, ascend into the super and there deposit her eggs?

It must be apparent to the bee-keeper desirous of keeping his bees on the non-swarming principle, that he must afford them breeding space equal at least to what they would have received in fresh hives had they swarmed, and it would be manifestly unjust to draw a comparison of the fruits of the labours of a population hatched out in the area of one box with that of say three others.

But to return to "J. E. B.'s" case. His first-mentioned hive A, he tells us, "was located in a 14½-inch Woodbury frame hive" . . . "Supered in May with a box 13 inches by 7. When this super "was two-thirds filled, slipped in a frame or eke; and when the hive became crowded a second frame, exactly like the first, that is 3 inches deep, was introduced as before, both between the super and the stock." "In spite of the ample accommodation thus afforded, assisted by ventilation, the hive threw out a swarm on the 18th June." . . . "The bees ultimately nearly filled the top box with fine honey, and carried their combs down into the inserted frames, but the total yield of honey did not exceed 32 lbs."

The cause of the escape of the swarm, and the short yield of honey from this stock, is solely attributable to over-enlarged super and limited breeding space. To aid in avoiding brood 4 inches is deep enough for a full width super, unless the space can be given gradually as in Mr. Fox's most ingenious "adjuster-hive," but still that hive and the plan of eking supers are open to the objection of less or more unfilled comb, completed work being always most desirable, whether the comb be for the apiarist's own table or the market. Had your correspondent placed his frames on ekes, beneath the stock instead of the super, with a still further enlargement of breeding space as required, the result would in all probability have been the retention of the swarm, and from the vastly increased body of respers a very different honey harvest.

The management of the second mentioned hive B was somewhat similar. It was located in a still less box, 11½ by 9, and supered also too extensively "with a box the same size as the stock!" . . . "The bees were very slow in availing themselves of the room afforded them," for the very good reason they did not then and there require it, and, as was to be expected, "sent out a swarm." . . . "Two shallow boxes were successively introduced between the stock and the super, and towards the middle of July the hive was also nadired." I may hint that placing an empty box between a stock hive and an all-but-filled super is considered bad practice by the storifier, as he thereby runs the risk of the bees rifling it of its contents, possibly with the idea that it is then beyond their control, a second super is always better placed above the filling one.

The third hive C had an inferior queen, and yielded 30 lbs. of honey, its management is not stated.

I quite agree with your correspondent that in a district, such as his own, where swarms are early, the yield must be

trast much more favourably than here in the uncongenial north, a May swarm being a rare sight I have long longed for, but have yet to see. In my experience of the two systems the swarming and the storifying, the latter has invariably been the most pleasant, least troublesome, and decidedly (from the greater yield of the finest comb) by far the most profitable. In a poor year swarms yield nothing, but require feeding, and the year is poor indeed that a well-handled depriving-hive does not make some return; in a good season the gain is proportionately great.

In a cold wet summer the immense population of a strong storified stock keeps up an invariably high temperature, and breeding goes on uninterrupted; when odd fine days occur the amount of honey then collected is amazing; indeed, to look on such a colony in full operation on a warm day to the enthusiastic apiarian is a sight most pleasant to behold, while, during similar cold backward weather the inmates of a half-filled box, continuing to swarm, instead of increasing in a similar ratio, have enough to do to keep up a sufficient temperature for comb-building.

I recollect of calling on an old farmer (a very experienced bee-keeper of the old school) during one of the late bad seasons, and in passing through his garden asked him how his bees were getting on, he told me he was feeding his swarms to keep them alive. I then put the question, How, he being in a much better locality and only three miles off, I should be getting from while he was giving to his bees? He seemed incredulous. I was only quizzing him. I invited him to come and see. The genuine delight of the old man on inspecting and carefully weighing between his hands a handsome octagon super just taken off, and his attempts to raise the high pile of octagon boxes from whence it had been removed, the greatest bee marvel of his life, was quite a treat to its owner.—A RENFREWSHIRE BEE-KEEPER.

BEGINNING BEE-KEEPING.

I DESIRE to attempt bee-keeping, and would feel obliged for some information as to how to proceed. I have commenced by buying a swarm of the 1st of May of last year in a common straw hive.—YORKSHIRE.

[Payne's hives are very good, and may be obtained at a moderate price of Messrs. Neighbour, 149, Regent Street, and 124, Holborn. We prefer them somewhat larger than Mr. Payne recommends.]

If you want to increase your stock by swarming you must not put on a super. If, on the other hand, you wish to get honey and would prefer purchasing what swarms you require, a full-sized super should be put on in April. Do not attempt to transfer the bees to another hive.

A plug of hard dry wood should be tightly fitted into the upper end of each glazed pipe, and fixed with white lead. To this should be screwed a wooden platform of sufficient size to support the floor board (which should be of wood, not stone) and hive without risk of a capsize. Let the hives face any point from south-east to south-west, but when once fixed never vary their aspect either summer or winter. Neither must you remove the milk-pan, which is quite as necessary for protection from the summer's sun and showers as from the winter's rains and snow.]

BEEES IN A GREENHOUSE.

I HAVE a greenhouse with a glass roof and front, south aspect, and a glass end with a full east aspect. May I use the eastern end of the house for a bee-house, making a sufficient entrance between the bricks for each hive—say three?

I am only a young bee-master; having bought two stocks last autumn, I wish to work them this summer on the depriving system, and I also wish to increase them to four stocks this season. Can I, after they have each thrown off a swarm, cut the hole in the top of the straw hive, and affix an adapting-board with super, and so obtain some honey this season from the stock hives, as well as from the swarms, should they be early enough? or must I wait until the second swarm comes off, if I find there is a probability of a second swarm coming?—W. H. P., Oxford.

[We have never known bees kept in a greenhouse, and it

would, therefore, be quite an experiment; still it is one that we should have no hesitation in trying in such a house as yours, and with little doubt of its success, if the hives be shaded in summer.]

It is generally rather difficult to obtain both swarms and honey in the same season; but we should begin by putting on small supers (to contain, say 6 to 8 lbs. each), in April. These will have little, if any, effect in delaying swarming, and may very probably be filled. Moderate supers may possibly be obtained from the first swarms, if the season be a good one, and you may also put supers on the old stock as you propose, but these cannot be relied on to prevent the issue of after-swarms. Should any such result, their stores may be appropriated at the end of the honey harvest, and the bees united to those stocks which are intended to stand the winter.]

RANCIDITY IN BUTTER.

AMONG all your correspondents who have written upon the subject of rancid butter, I do not see that any has suggested a remedy which I have found efficient. I always when setting the milk put into each pan a pinch of nitre (refined saltpetre); also in winter put water just sufficient to cover the bottom of the pan, and in summer cold water. I have continued this system for many years, and my butter is, and always has been excellent.—G. A. E.

OUR LETTER BOX.

RUNKIN BANTAMS (W. B. J.).—Your Bantams, about the size of Partridges, without tails, round as balls, hens buff and rose-combed, cock orange red, are what were called "Runkin" Bantams, and were far more common years ago than they are now. They have always been considered excellent layers.

CREVE CURRS (J. Marsden).—Write to Mr. Bally, 113, Mount Street, Grosvenor Square, stating to him what you require to convey to America.

EXHIBITING ONLY ONE GAME HEN.—"Y. B. A. Z." in your impression of the 28th ultimo, in his endeavour to enlighten the minds of others, says:—"Gradually it has become an established rule to limit Game hens to one. Bradford has set the example in all the breeds." Now, the same thing has been carried out by this Society since 1861. If "Y. B. A. Z." will send me his address I shall be glad to furnish him with prize lists and catalogues for 1861-2-3-4.—WILLIAM IRVINE, Secretary, Halifax and Calder Vale Agricultural Association.

EGGS AFTER A FREEZING TEMPERATURE (Blue Minerva).—When water freezes eggs will chill, and, if you were to break one, you would find a partial fusion of the yolk and white. They spoil without picking in such weather as we have had.

FOWLS IN A CONFINED SPACE (Delta).—Your feeding is good; but one sod of growing grass is worth a dozen Cabbages for the health of fowls. You will find ground corn, twice per day, more economical and more nourishing than whole corn. The golden rule of feeding is to give so long as they will run after it, and never to allow a morsel to lie on the ground. They are discreet animals, and know when they have enough.

UNMATED POULTRY (J. C. L.).—All poultry lay at a certain age (being in good health and condition), in obedience to the law of nature, whether there be a male with them or not; but it does not increase their fecundity to withdraw him. The period at which Ducks begin to lay is a question of condition, after eight or nine months. The second year is generally the best. The Aylesbury lay soonest. Geese promote laying. Many lay in the winter, especially the Aylesbury. You may safely set the eggs after a week.

FEEDING FOWLS FOR EXHIBITING (Amy).—Ground oats, mixed with milk, are the best food; if the bird is low in flesh, and time presses, melt some suet, and add to it. The out-growing spur is a disadvantage. It is not a disqualification; but, if two birds were in close competition, it would turn the scales against the bird.

M. DE SORA'S POULTRY ESTABLISHMENT (Chanticleer).—It is said a man fished in the Seine for gudgeons with such uniform want of success that he wrote a book proving that the fish in question was as mythological as the phoenix and salamander. We have sought M. de Sora all over France, and we believe he is either a myth, or has effectually concealed himself under a "nom de plume."

POULTRY CLUB (E. H.).—You are mistaken in supposing we are partisans of any party in the poultry world. We endeavour to hold an even balance, and an impartial hand. If the Poultry Club be for the good of the pursuit, we wish it all success. We cannot tell you how many remained at the Club meeting at Birmingham, when the vote of censure was passed on the judges. We only know Mr. Fowler wrote us that he and many more had left before anything of the sort was mentioned.

LIGURIAN BEEES (C. W., Kingsland, Sarsrobury).—Write to T. Westbury, Esq., Mount Radford, Exeter. We shall be glad to receive the contributions you refer to.

STEWARTON HIVES.—Messrs. Neighbour & Son inform us that we were wrong in stating that these hives are not to be purchased in London. They have them at their shops in Regent Street and Holborn.

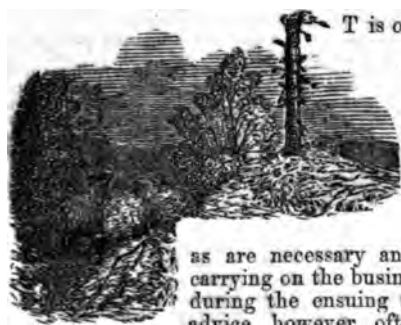
FREIGHT (W. L. L.).—Any carpenter can construct one, and, if made of wood, the frame jointed, only resting on a row of bricks, not fixed to them, and the roof covered with asphalt felt, it could be readily moved.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MARCH 21-27, 1865.	Average Temperature near London.			State in last 38 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
21	Tu	Sun's declination 0° 22' S.	51.1	32.7	41.9	17	3 47 6	12 47 6	19 2	18 11	24	7 16	80
22	W	Sweet Briar foliates.	50.7	34.6	42.6	18	4 6	14 6	2 3	after.	25	6 37	81
23	Th	Bourge Laurel flowers.	50.6	35.7	43.2	19	5 5	16 6	40 3	40 1	26	6 39	82
24	F	H. Nepton died, 1818.	46.5	32.3	40.8	20	6 5	17 6	12 4	0 3	27	6 21	83
25	S	Lady Day.	51.1	32.9	42.0	21	6 5	19 6	44 4	22 4	28	6 2	84
26	Sun	4th or Midlent Sunday.	52.1	37.4	44.2	22	6 1	21 6	13 5	44 5	29	5 44	85
27	M	Golden Sacrifice flowers.	54.1	34.7	44.4	23	49 5	23 6	43 5	7 7	30	5 26	86

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 51.2°, and its night temperature 33.5°. The greatest heat was 75° on the 27th, 1850; and the lowest cold, 14°, on the 25th, 1850. The greatest fall of rain was 0.69 inch.

GARDEN IMPLEMENTS.



It is often recommended to take advantage of the long evenings and generally less busy days of the winter, in taking stock of the garden, and looking up such things as are necessary and convenient for carrying on the business of the garden during the ensuing season; and such advice, however often repeated, can scarcely be over-estimated.

In the first place, it is advisable to decide at once what alterations, improvements, and transplanting are to be carried out; then to ascertain as nearly as possible what seeds, plants, &c., will be required; then, again, to look over the stock of tools and implements, to see that they are in good repair, and to ascertain what additions should be made to them. It is of the utmost importance where neatness and expedition in performing the work of the garden is desired, that the workman should be supplied with proper tools, and these in good condition, for, however true it is that a good workman never finds fault with his tools, it is equally true that any workman, whether good, bad, or indifferent, will perform his work better with a good tool than with a bad one.

Now, we often meet in gardening books with reminders in reference to planting, altering, sowing, &c., but as far as my own experience goes, I have met with very few instructive articles relative to garden tools. Why they are so seldom mentioned, is certainly not because the subject is of less importance than those above named, for I have known instances where various tools and implements of somewhat costly make were lying idle, or hanging up in the tool-house with rust eating into the metal, and damp mouldering in the woodwork, because no use could be found for them, while really useful implements were sadly deficient. Curious as it may appear, I have seen various implements, including a costly garden engine, rotting away in a tool-house, while men were digging with stumps of spades, either broken or worn away until scarcely enough was left to turn up 3 inches of soil.

This would show that there must have been great neglect or want of judgment in selecting tools in the first place, and though such may be extreme cases, it is not improbable that there are many to whom a few useful hints would be acceptable, especially young gardeners, who are sometimes apt to be taken by the appearance of some "new-fangled" machine, which, after all, is found to be simply a trap to catch the unwary. There are various "patent" implements put before the public, some of which only increase the labour, while others are merely simple and effective implements, complicated and spoilt. I could name several such that I have tried, but it will

be less invidious to do my best to show what implements would be most useful in the garden, pointing out the uses of them, and giving such reasons for selecting them as I hope will be deemed satisfactory.

The only book in which tools are properly arranged and classified, so far as I am aware, is "Loudon's Encyclopædia of Gardening." There we find them classed as tools, implements, and instruments; the latter being chiefly for operation—as the knife, the shears, the scythe, &c.; implements for application—as the watering-pot, garden-engine, lime-dredger, &c.; for adaptation—as the flower-pot, the rustic vase, the stake, &c.; while tools are chiefly for breaking into and turning up the soil. This arrangement of tools, the only one with which I am acquainted, is very good, but is not what I propose entering into at present, my object being to give a list of tools suitable for villa gardens, to point out their uses as far as practicable, and afford a few hints for selecting the most serviceable kinds. This I would wish to do in a manner that may be useful to gardeners and their employers—to the latter, by showing what tools are really necessary in the garden, and to young gardeners by advising them to prefer such tools as are really serviceable, and not be led into purchasing tools and implements that present great attractions to the eye, but are found to be an incumbrance as far as their use is concerned.

I am far from recommending any gardener to limit his stock of tools to such as are in general use. On the contrary, I would advise him to obtain all he is likely to have need of, provided they are of serviceable kinds. Yet it is well not to carry the number too far, for the reason that in many gardens a very limited number will be sufficient for all purposes, and beyond these it is not worth while to encumber the place. This, however, is a question apart from my present purpose, which is to give the names and uses of various tools in a way that I hope will be useful.

The following are such as are required in most gardens of any pretensions:—

<i>For removing soil, &c.</i>	<i>For operating on trees, &c.</i>	<i>Crowbar.</i>
Wheelbarrow.	Saw.	<i>Miscellaneous.</i>
Handbarrow.	Axe.	Roller.
	Bill or hatchet.	Ladders.
<i>For carrying and applying water, &c.</i>	Shears.	Turf-beater.
Waterbarrow.	Knife.	Turfing-iron.
Garden engine.		Line.
Syringe.	<i>For turning and breaking into soil, &c.</i>	Measuring-rod.
Watering-pot.	Spade.	Dibber.
	Fork.	Shovel.
<i>For operating on Grass, &c.</i>	Shovel.	Hammer.
Mowing machine.	Pick.	Pincers.
Scythe.	Mattock.	Brooms.
Shears.	Hoe.	Baskets.
Edging-iron or razor.	Rake.	Brush.
	Trowel.	Dredgers.
		Fumigators.

The following I consider materials generally used in gardens of ordinary extent:—

Nails.	Pots.	Soil.
Shreds.	Mats.	Lime.
Manure.	Mats.	Sulphur.
Sticks.	Labels.	Tobacco, &c.

The above are, as far as I can call to mind, nearly all

the implements, &c., that are in general use, or are likely to be required in an ordinary villa garden; but of nearly every kind of implement named there are different varieties which it would be worth while to notice in order that the best might be selected. For instance: to begin with

IMPLEMENTS FOR MOVING SOIL, &c.

WHEELBARROWS.—That kind in general use about London I consider to be very well contrived, on account of being fitted with a portable top. This allows of a great deal of light rubbish, leaves, or litter, being placed on it, and by taking off the top, the barrow is handy for wheeling gravel or other heavy material. There is a kind of wheelbarrow in general use in the northern and midland counties, which, although not so light and handy for garden use, is more so in the greenhouse or among potted plants, on account of having a flat bottom, which is convenient for plants or soil, and makes a very good portable potting-bench. I have frequently found it very useful in this way; pots are filled with soil ready mixed, and placed near the pipes in the hothouse to warm, the barrow is next drawn in, and Pines and other stove plants can then be potted without removing them out of the house. Even in the greenhouse, supposing there is no stove or hothouse, potting may be done in frosty, snowy, or rainy weather, without having to carry the plants out, and much injury to these may thus be prevented. I have seen a wheelbarrow similar to that in common use about London, having two wheels fitting closely, or nearly so, to the sides of the barrow, nearly in the position where the ends of the axle are seen in the one-wheeled barrow. This arrangement, of course, makes the load lighter for wheeling. It is also well for turning and shooting, but for various reasons it is not so generally useful as the one-wheeled barrow, not the least being, that it cannot be conveniently used on boards or planks, and then the extra expense is scarcely compensated for by any advantage that I can perceive. Various contrivances have been brought into use at times for carrying plants in pots. Barrows have been made with one wheel, with two, and with three, or even four wheels, but all are more or less objectionable—the one-wheeled barrow on account of the impracticability of obtaining a level surface while the barrow is at rest; and when in motion the two-wheeled has the same fault. This is obviated in the three and four-wheeled barrows, but these are not so easily moved about into the shed or greenhouse. Where more than one man is employed, a barrow without any wheels will, probably, be most handy, so that we pass on to

HANDBARROWS.—These are chiefly used for carrying plants from one place to another, but a handbarrow requires two persons to use it. Plants are thus moved about without the jolting and shaking they would receive in the wheelbarrow. The handbarrow may also be used as a potting-bench inside the stove or greenhouse. A handy size of one for ordinary use, would be about 4 feet long, exclusive of the handles, and about 2½ feet wide. Something of a rail round the sides would make it more convenient for small pots or holding soil; but when chiefly used for large plants, it would be better without it. About 18 inches would be high enough, for I think it would be a mistake to make it any higher. I have seen them higher, but such seem to me to be clumsy, compared with those that have shorter legs. If the handles are a little bent they look better.

Small trays or handbarrows without legs are sometimes used to move large plants about; the plants are tilted on one side, and one edge of the tray thrust under the plant or pot; the plant is then drawn on and easily lifted about with less fear of breakage than would otherwise be the case.

Having made some alterations here lately, and the nature of the ground being such that the wheelbarrow could not well be used, I have made use of a two-handled box, the box being about 18 inches deep, the same in length and breadth. This is conveniently fitted with two handles so as to be carried between two men in the manner of a handbarrow. With this some scores of tons of sand, gravel, peat, loam, &c., have been moved about, and that without making the pits and marks that a wheelbarrow would. I am aware that there is nothing new in the idea, as similar contrivances are in use; I merely give the hint, as such a box may be easily constructed by any one who can handle a saw and hammer,

and it will be found useful in muddy weather as a cleaner method of moving soil than the wheelbarrow. Such barrows as these require two persons to work them, consequently, where but one man is employed there will be little use for them. In that case, a flat-bottomed wheelbarrow will be found most useful.—F. CHITTY.

(To be continued.)

[We purposed publishing the foregoing portion of Mr. Chitty's communication last week, but withdrew it upon receiving the painful intimation that death had suddenly removed him from among our helpmates. Since then we have received the following from his employer:—

"Gentlemen,—It is with sincere regret I announce the death of your able contributor, Mr. F. Chitty, after only three days' illness, and at the early age of thirty-three. Although he has been in my service but a little more than two years, yet the confidence I had in him was unbounded. He was in all things a trustworthy and faithful servant, and respected by all who knew him, not only for his ability as a gardener, but for his kind and unassuming manners. He was ever ready to impart and to receive any information connected with his profession, and though he has been here but so short a time, yet will he be much missed by the lovers of horticulture in this neighbourhood. He has left a widow and five young children (the oldest not yet nine years old), to lament his loss, and totally unprovided for. I, therefore, feel no hesitation in appealing to the kind feelings of the readers of your Journal for some assistance for the poor widow and children, feeling sure that all who have read his sound practical articles on horticultural subjects, will contribute something to alleviate so distressing and deserving a case. Will you kindly consent to receive any contributions that may be forwarded to you?—I am, &c., THOMAS WEBLEY, *The Upside, Selly Oak, near Birmingham.*

"P.S.—Should any of your readers wish for further information, I shall be happy to give it. I enclose a list of contributions already forwarded to me.—T. W."

	£	s.	d.		£	s.	d.
Mr. Thomas Webley	10	10	0	Mr. J. Webley	1	1	0
Mr. Pendleton	1	1	0	Mr. Hy. Webley	0	5	0
Mr. Charles Winn	2	2	0	Mr. Smith, Moseley	0	10	0
Miss Winn	1	1	0	Mr. Rogers (a gardener) ...	0	5	0
Mr. Webley, jun.	2	2	0	Proprietors of "Journal of Horticulture"	3	0	0
Mr. P. Webley	1	1	0				

We shall readily receive any contributions to this fund and forward them to Mr. Webley, whose generous testimony to the merits of his late servant we heartily sustain. Mr. Chitty was always to be relied upon, and though well skilled never gave a hasty opinion; though very unassuming he was firm in sustaining what he felt was the truth. We confidently ask our readers to aid in helping the widow and orphans of a man so worthy in every way.—Eds.]

THE MODERN PEACH-PRUNER.

No. 6.

TRANSPLANTING.

THE time and mode of planting a young Peach tree may now be considered. Very much of the after-success of the tree depends on this being rightly done; therefore it is a more important operation than at first sight might appear.

A tree may either be reared in our own gardens, or it may be purchased at some neighbouring nursery. In either case it need not be long out of the ground; and this constitutes a case differing somewhat from that in which trees are received from a distance.

In the first supposition, if the tree has been trained against a warm wall, with all its branches and shoots fairly exposed to the sun, then it will be in first-rate condition for transplanting. By taking care of the all-important spongioles, by replanting at a short interval of time carefully in a suitable soil, and on a mild and genial day, no check will take place, and root and leaf will soon resume their reciprocal functions. Supposing the tree not to have been reared under such favourable conditions, but still not to have been more than a few hours out of the ground before replanting, it may then also be depended upon, care being taken not to mutilate the roots, which is the main point, to continue its growth without much check.

In both these cases early planting is recommended. The leaves being still on the branches, though they drop when the tree is lifted, they will soon recover their state of tension, and be ready to receive their daily supply of sap from the roots, which, being uncut, will also shortly recommence their proper functions.

We may even expect that some new cellular tissue will be added to the spongioles by reason of this early change of place before winter comes on; for if transplanting be done in October there is at that period much latent and unex-

pendent earth heat, which heat is absolutely necessary to enable the roots to extract from the soil the food proper for the tree. Besides, the leaves being also uninjured, begin to elaborate the fresh sap, and so increase that reserve of cambium which some think is dispersed in the interior tissues of the tree, for the purpose of preserving its vitality during the trials of the winter season. This seems a reasonable supposition, and an explanation of the reason why early transplanting is so beneficial when properly performed. Our French neighbours are not unaware of this, for at Montreuil November is considered to be the proper month for planting; but then there is, no doubt, as much heat in the earth during November in that sunny spot as there is in our cloudy land during October. When, however, trees are received from a distance the case is different. The leaves cannot be expected to recover, and no advantage can be obtained by planting so early. Provided, then, care is taken to anticipate the extreme cold of November, early in that month is a suitable time.

Should early planting be impossible, it is not a bad plan to wait till mild weather sets in in February or March. Dry, windy, or sunny days are unfavourable for transplanting, on account of the amount of evaporation they promote in the tree; for even when the trees are without leaves, evaporation takes place through the bark, and if there be no corresponding absorption of moisture through the spongioles to supply this waste, they being out of the ground, the tree suffers. A mild, rather damp day is then the best for the operation we are describing.

Of course, young trees are by far the most easy to remove. Whenever large fruit trees are transplanted, men of great experience in such matters tell us that the success of the operation depends mainly on the quantity of earth removed with the roots. They also recommend such large trees to be removed in a growing state, because the moisture remaining in the earth adhering to the roots is at once assimilated as food for the tree. But when the earth is cold and the tree dormant, this moisture surrounding the roots is not absorbed by them, nor can it be. The result is that it has rather a tendency to rot the roots, more especially those portions which have been injured. There is no doubt that the whole subject of transplantation is a very interesting one, and deserves careful study.

The process of planting is as follows. Having chosen the young Peach tree for its clear and polished bark, the proper distance to place the stem from the wall is about 6 inches. Some say 4 inches, but on the authority of the best cultivator in England it is stated at 6.

If the tree is to be planted where no other has stood, a hole twice the diameter of the roots when spread out is sufficient. If otherwise, the old soil must be removed, and the opening made much wider. A piece of pavement or a wide flat stone is generally placed under the tree to prevent the roots striking downwards. The old monks always did this, and famous gardeners they were. Roots grow in tiers; therefore the lowest tier must be carefully spread out all round, occupying the ground without crossing each other if possible. Fine pulverised soil must be shaken over this lowest tier, but no manure must ever touch them. Never tread on the roots, as so many do, and never move the tree up and down, which absurd practice has the effect of doubling up the fine ends of the roots underneath. Break down the sides of the hole for fresh earth, and place pieces of turf cut from a rich field for the roots to run into at their first start. Then the upper tier of the roots should be spread out fanwise in the same careful way, and equally covered. When the earth is filled in to three-fourths, water freely in light soils, and less in firm ones. More water in any case should be given to trees planted in the spring. Mulching at the time of transplanting is an excellent old custom; it excludes frost, and lessens evaporation.

Deep planting is an evil in the case of fruit trees. No tree should be planted deeper than it formerly grew, or it will be in danger of having its roots stifled for want of air; and this will cause the tree to languish, till, by an effort of nature, it pushes out roots nearer to the surface for air. Thus delay will arise instead of progress. It is by far the best, especially in firm and retentive soils, to plant the tree so that a small mound is necessary to cover the roots. Let these be within an inch or so of the surface—the ground

will always settle. Deep planting should always be avoided. If done, the tree makes no spring growth, but grows late in the year—exactly the reverse of what we require.

Some trees are notoriously more difficult to transplant than others. Some place them in this order as to risk—first the Cherry, then the Apricot, and then the Peach; but if carefully done there is little real danger. We should never forget to secure transplanted trees firmly to the wall, for fear of high winds.

In the case of the Peach there is always a certain danger lest the buds which have remained latent during the whole of one season should not break at all; therefore the tree may be headed down soon after it is planted, as a rule. Nevertheless, could we secure the roots intact, there would be little need of this. If the tree has been grown in a pot the roots ought to be entire, and having shaken out most of the ball of earth, the roots should then be spread out well, and no shortening ought to be required. This, of course, presupposes that the tree while in a pot has been regularly trained for the particular form required.

On the whole, it cannot be said that trees which have been more than three years in pots are the best suited for planting out. The roots become strong, and have an inward twist, which makes it perilous to endeavour to open them out well. A year or two may be passed with very great profit if the trees be well looked to, and pots changed as the roots fill them. Up to three years this may be done; and certainly the way that vertical cordons, three years established in large pots and full of fruit-buds, both grow and bear the season after they are planted out would astonish those who depreciate pot-cultivation.—T. C. BRÉHAUT.

STRAWBERRIES IN DORSET.

THE Strawberry plants here are beautiful, and have wintered well, as can be seen by any of your readers, who live near here, if they please to look in. John Powell is first-class as a plant of dwarfish habit. The fruit last year was excellent. Sir Joseph Paxton is a charming plant; and, with its fine bold crowns, now beginning to show its fruit-buds, is a fine verdigris green with stout foliage, uninjured by this severe winter. President, also, is a nice, strong, hardy plant, and defiant of winter. They are two of the best, as plants, of later-raised novelties, to suit and please me. Eclipse is also hardy and healthy, and, I fancy, it is the highest flavoured and best of all the early Strawberries.

The first-rate Queen-growers of this county, who seldom fail with the Queen, failed signally last year. They were loud in the praises of Wonderful especially, Rivers's Eliza, and Empress Eugénie. These three and the Frogmore Pine and Royal Hautbois are my pentateuch of dependance and excellence. I have extra-fine plants of the Scarlet Pine in the same place as La Constante used to stand. It is treated in the same way. It is a delicious first-class Strawberry, of quick establishment, and of a most hardy and robust constitution. As it does not always set its fruit well, I have not recommended it; but it is well worth a trial. You would find no trouble with it as a plant.—W. F. RADCLIFFE, Tarrant Rushton, Blandford.

MY PLANTS,

AND HOW AND WHERE I FOUND THEM.

"Earth is now green, and heaven is blue;
Lively spring, which makes all new,
Jolly spring doth enter:
Sweet young sunbeams doth subdue
Angry, aged winter."

It was in the spring of 1863 that I found myself located in a small village in North Staffordshire. My husband had accepted the offer of partnership with a medical gentleman in that county; and it was with low spirits and a large amount of fearfulness that I left the Great Northern Station, and found myself whirling onwards, onwards, to what I feared would be a mass of smoky chimneys and furnaces; for I am ashamed to say that my idea of Staffordshire was embodied in that well-known expression "the Black Country." Manufacturing towns and smoke were my abhorrence. You may therefore fully realise my mental pain. I, a lover of

nature and beauty, of the pure air of the country, of all sweet and harmonious sounds, feared a lifetime of incarceration amongst blackened houses, the noise and din of machinery, and the anxious and careworn faces of the operatives. There was no music for me in the incessant hum, and clash, clash of the mechanical motions of the factory. The melancholy poetry which one may weep out of the thinly clad, consumptive, and starving workers had no charm for me. Upon their brows I had seen written, as with a finger of blood, "Slaves to the Mammon of Unrighteousness," and I had wept silent tears as I saw them sinking, slowly but surely, into an early grave.

It has always been my delight, and almost a necessary part of my existence, to wander free and unrestrained, seeking the health and purity which God so freely scatters over hill and dale, and in the secluded spots where dwell some of our sweetest and truest favourites. But I will tell you how this gloomy foreboding, like many a dark cloud o'er life's pathway, passed away. On and on sped our train—an express, by-the-by, which is never favourable for giving travellers a very close insight into the botany of the country through which they pass. How delightful, how reviving, then, was it to that despairing lady in the first-class carriage to find, after leaving Derby and approaching the termination of her journey, that the scenery became most wild and romantic, the country apparently favourable for Ferns, and everything indicating a luxuriant vegetation! The rugged and picturesque hills and vales of Oakamoor charmed me, and I gave utterance to my inward joy in exclamations which no doubt made my fellow passengers believe that I was somewhat beside myself. My husband, who has a pet theory of his own that "every one is mad upon some point," of course immediately brought the subject upon the *tapis*, and concluded his oration by bringing forward at the same time his wife as an apt illustration—mine was a Fern mania. Denial was impossible. I felt it myself, and the learned doctor was left in the full enjoyment of his thesis; for we all know that

"None but a clever dialectician
Can hope to become a great physician;
That has been settled long ago.
Logic makes an important part
Of the mystery of the healing art;
For without it how could you hope to show
That nobody knows so much as you know!"

Woman like, however, I must have an argument, particularly as we had a few minutes still to spare ere we arrived at the station.

I proposed as a query
In place of his theory,

Whether my monomania had not commenced when I married him? We had not satisfactorily settled that knotty point when the diminishing speed of our train, and soon after the words "Frogghall," "Frogghall," uttered in the Staffordshire dialect, put an end to our repartees, and reminded us that we had several miles of our journey to accomplish by road, and that it was necessary to stow away the bairns and luggage.

I will pass over the usual bustle of settling down in a new house, the necessary amount of breakages and discomforts ere everything gets "fettled" up, which more or less falls to the lot of all under like circumstances; the curious eyes which scrutinise, and the more curious remarks which are made upon newcomers into a small and self-satisfied village in an inland county—all this we passed through with the usual and provoking nonchalance of old travellers.

It was about three weeks after our arrival in T—that a patient came in. It came out in the course of conversation that he was the village gardener, and I immediately questioned him as to the nature of the surrounding country and its facility for Fern-collecting. To my surprise he began smiling, but he apparently apologised for the same by explaining that he had just come from that omnium gatherum the village shop, where he was fairly pounced upon by several of the customers with queries as to "what the new doctor's wife was allus a getting and carrying home 'hem green things for. She seems wholly taken with 'things we wouldn't stoop to pick, much more plant 'em in our gardens. A handsome Gillyflower now would be something like, but not much rubbish as 'Ferns,' which grow

everywhere." One woman more sapient than the rest said, "I know what she does with 'em though, her husband's a doctor, and she gets 'em to make 'yarbe' tea off, to be sure. "Aye, sure enough," they all said; "missus you're gottin un now." So it was agreed in the self-instituted committee that the weak-minded writer of this was a collector of herbs. The gardener finished his recital by smilingly telling me that I was the talk of the place. "You see, mam, we're so accustomed to see these sort o' things that we doant notice them. Maybe they doant grow where you comes from; they says you'r a fine London lady, and mayhap they doant grow thereabouts?" However, in spite of columniators and many side looks as I passed through the streets, I still indulged in my "yarbe"-gathering propensities. Perhaps with Dr. Seraphino they mentally ejaculated—"May the Lord have mercy on your position, you wretched, wrangling, culler of herbs!"

A year passed away, and as spring came round again I eagerly sought my old favourites and their haunts, from which through unforeseen circumstances I was removed soon after. I propose, for the amusement of those who are like myself "Fern-mad," to give a sketch of pleasurable excursions amongst woods and rocks, of prying into walls and under overhanging grasses under a broiling sun or in a pouring rain, in search of these children of the earth; for it will serve to show how much real enjoyment there is in a country walk in all seasons and all weathers.—ALICE.

THE ROYAL BOTANIC SOCIETY'S FIRST SPRING SHOW.

THIS was held on Saturday the 18th, and notwithstanding a due east, and exceedingly keen wind, was honoured by the presence of H.R.H. the Princess of Wales; and well worthy was the exhibition of such distinguished patronage, for never do we remember having seen Hyacinths in such perfection—the spikes so fine, the colours so rich and varied—as they were on this occasion. They constituted the chief attraction of the show, but not the only one, for there were the gay early Tulips, Roses, some almost as good as may be seen in summer, Cyclamens, Primulas, Cinerarias, and Camellias, the whole making a display of colour such as one could hardly expect at a season when Nature is only beginning to throw aside her winter dress.

Year after year Mr. Wm. Paul and Messrs. Cutbush have contended with varying success for the chief honours with this flower, and after many a hard-fought battle it was no surprise to find them again in "the tented field." Mr. W. Paul was first both for twelve and for a collection with magnificent spikes having a luxuriance, combined with a compactness of growth and richness of colour, that at once struck the observer. The twelve consisted of Solitaire, Von Schiller, and Macaulay, remarkable for their brilliant colouring; King of the Blues, splendid; Garrick, Grand Lilas, Prince Albert, large for that kind; Grandeur à Merveille, and Van Speyk very fine; Alba Maxima, Tubiflora; and Ida, yellow. Messrs. Cutbush's twelve were also very fine. They consisted of La Prophète, Von Schiller, splendid; Macaulay, Florence Nightingale, Emmeline, Snowball, remarkable for its large bells of great substance; Mont Blanc, Marie, a splendid spike; Baron Von Tuyl, Garrick, Grand Lilas, and Mimosa. The collections from Mr. W. Paul, comprising 125 pots, and from Messrs. Cutbush 100, included nearly all the best kinds of the various colours, and it would be tedious to enumerate them. Lord Palmerston and King of the Blues, which, relatively speaking, may still be considered new, fully maintained their high character, the white eye and clear blue of the former and the fine deep blue of the latter rendered them conspicuous. We did not, however, observe either the rich crimson red Josephine or Robert Fortune. Among Reds, Queen of Hyacinths, Von Schiller, Pélissier, Howard, and Solitaire were conspicuous by their high colour; of Whites the best were Queen of the Netherlands, Mont Blanc, and Alba Maxima; Grandeur à Merveille, bluish; Fair Maid of Denmark was also very pretty. Of Blues, in addition to those already named, were excellent spikes of Van Speyk's Bloksberg, Admiral Coligny with very large bells, and Couronne de Hollande; whilst in those shades approaching black

these were Fernck Khan, Prince Albert, Havelock, and Minosa. Koning von Holland, Ida, and Duc de Malakoff were the only yellow, and Haydn the only mauve.

In the Amateurs' Class the only exhibitors were Mr. Young, gardener to R. Barclay, Esq., Highgate, and Mr. Wheeler, gardener to Sir F. H. Goldsmidt, Regent's Park, who were respectively first and second, and the spikes were a great improvement on those shown last year.

Early Tulips were exhibited by Messrs. Cutbush and W. Paul, both in the class and in numerous collections, the former taking the highest award in both cases with very large flowers. The kinds shown by Messrs. Cutbush were chiefly White Pottelbakker, Proserpine, Fabiola, Couleur Cardinal, a fine reddish scarlet, Keizerkroon, and Duchess of Parma, very showy, Tournesol, and Vermilion Brilliant. In Mr. Paul's collections, in addition to several of the above, we noticed Roi Pepin, a very showy white and red, Archduc l'Antioche, a very fine crimson and yellow, and Cerise Gris de Lin, lilac rose, margined with yellowish white, very distinct in colour. Van der Neer was also a good purplish violet.

Roses in pots came from Messrs. Paul & Son; conspicuous among these was John Hopper, which stood alone in the fulness of its beauty, and dazzling in colour. Madame Faloot and President were also very good. Mr. W. Paul contributed three excellent boxes of cut blooms, among which were excellent examples of Gloire de Dijon, President, George Paul, Madame Victor Verdier, Lord Macaulay, Rev. H. Dombain, Marquise de Foucault, Senateur, Comtesse de la Barthe, a pretty yellow Tea, Safrano, and Alba Rosea, very pretty and delicate in colour.

Cut Camellias in fine condition were numerous shown by Messrs. Lee, Hammersmith, W. Paul, B. S. Williams, Mr. Trussler, gardener to D. J. Kay, Esq., Hoddesdon, and Mr. Todd, gardener to Sir C. Isham, Bart., Lamport Hall; and Mr. Bull sent a collection of very good specimen plants, among which the most remarkable were Mrs. Abbey Wilder, Raffles, and Valtevarado.

Collections of flowering and fine-foliaged plants were exhibited by Mr. Wheeler, Mr. Young, and Mr. B. S. Williams. Among those from the latter were Hedera Hookeri in fine bloom, and a fine plant of Gleichenia semivestata; while Mr. Wheeler had Thyracanthus rutilans and a well-bloomed specimen of Azalea Broughtoni, besides Marantas, a Dicksonia, and other plants with ornamental foliage, Deutzia, Cytisus, &c. Mr. Williams likewise showed a small collection of new and rare plants, chiefly consisting of Agave, Yucca, and Dracena, together with Beaucarnea stricta; also a new Azalea, Souvenir de Prince Albert, rose, broadly-edged with white, and Pandanus Linnæi. From Mr. Bull came the collection of Aucubas fully noticed in our Floral Committee report of last week, the female Aucuba and A. himalaica in fruit, Camellia Prince Camille, a finely imbricated red; Asplenium myriophyllum, from South America, with very graceful finely-divided fronds; Anthurium angustioranum; Aglaonema commutatum in fruit, and a double Chinese Primula with large rosy purple flowers.

Mr. Veitch sent Rhododendrons, Princess Helena and Princess Alexandra, both of them pretty hybrid varieties apparently obtained from Jasminiflorum, partaking of that character, but having a long tube, in Princess Alice, bright rose, the flower a rosy blush; whilst Princess Alexandra is pale blush with orange stamens and very pretty.

Messrs. E. G. Henderson sent Aucubas in flower and very, and the male plant of the variety picturatum, Rudaea succocephala with large green foliage and terminal clusters of pure white flowers; excellent collections of Cyclamens, including several very pretty varieties of persicum, Fern-leaved and Anemone-leaved Chinese Primulas, and a pretty variety called carminata splendens with salmon rose flowers. Mr. Todman, gardener to E. Hudson, Esq., Clapham Park, exhibited some good double and single Chinese Primroses; Mr. Weatherell, Finchley, Primulas and Cinerarias in excellent bloom; Mr. Paul, a collection of Crocuses and Narcissus, and some pots of Lily of the Valley, very fine both as regards flowers and foliage; Mr. Young, Tulips; and, lastly, Mr. Laing, Twickenham, two plants of the common Aucuba, bearing an abundance of its beautiful coral red fruit, and in this state forming highly decorative objects. There can now be little doubt that when the male plant

becomes more widely disseminated, the Aucuba will be as much valued in ornamental gardening for its fruit as it now is for its foliage.

ROYAL HORTICULTURAL SOCIETY.

WEEKLY SHOW, MARCH 18TH.

On this occasion Messrs. Lee sent a very handsome specimen Camellia Madonna, also some beautiful cut blooms of Countess of Orkney, Jenny Lind, Leeana superba, and others; Lycaste cruenta and Skinneri, Dendrobium nobile, and five standard Azaleas in excellent bloom. From Mr. Bull came Brahea dulcis, Cyrtopodium barbatum giganteum and villosum, Dracenas, Platycerium alcinorne, a fine specimen, and plates of his new Chrysanthemum Sensation, with variegated foliage, and Verbena Popular, also with variegated leaves. Messrs. A. Henderson sent a small miscellaneous collection of spring flowering plants, including Gastrolobium, a Grevillea, Rhododendron ciliatum, &c., and Hebeclinium giganteum, with lavender Ageratum-like flowers; Mr. Harding, Maddox Street, five very dwarf and compact well-bloomed standard Azaleas for the dinner-table; the Rev. G. Cheere, Anne Boleyn Pinks; Messrs. Lucking & Greeves, similar exhibitions to those of previous weeks; Mr. Boyce, Stockwell, Chinese Primulas; and Mr. Long, gardener to Sir H. Hume Campbell, a flower of the Life Plant. Mr. Brown, gardener to Mrs. Ashton, Elmdon Hall, exhibited some fine Easter Beurre Pears from a small tree on a south wall, the crop numbering 130; and Mr. Melville, Dalmeny Park, two heads of "Improved Milan Sprouting Cabbage" obtained by crossing with Brussels Sprouts, and having the same appearance and being as compact as the latter vegetable; also a green-leaved Sea-kale, said to be easier to blanch than the purple kind.

LIVERPOOL FLOWER SHOW.—There was an excellent exhibition of spring flowers, but we must defer our report till next week.

MUSHROOM FORCING.

As my mode of Mushroom growing with chambers underneath is somewhat different from the common mode, perhaps some of your numerous readers will be glad to know how I succeeded. Between the time of writing to you and seeing your answer, which was given in your Journal of the 23rd ult., page 173, my Mushrooms had begun to appear by thousands. I then allowed the dung in the chambers to cool down as it would, and I built up a lining with a mixture of stable-dung and leaves, 4 feet high by 2½ feet wide, along the front of the beds and outside the chamber doors. I covered with straw and long dung, and the result has been that I now have Mushrooms in abundance, which for size, thickness, and flavour by far surpass all others that ever I saw grown in a Mushroom-house or elsewhere. The chambers underneath the beds form an excellent place for forcing Sea-kale in pots, from which I have cut a dish every other day since the 8th of November.—H. L.

SUNK HOUSES WITHOUT FIRE HEAT.

In your Journal (No. 206), Mr. Geyelin has given a plan for a sunk pit, which is most ingenious, and, I think, quite practicable. He will, however, pardon me for suggesting the following alterations. No benefit, but rather the reverse, is obtained by raising the hotbed so high above the ground. It should be level with the surface, and then the walls of the sunk greenhouse or pit need not be more than 2 feet above the level of the soil. The coping on the top of the walls should be removed, and a wall-plate, framed to the rafters, substituted in its place, so that the sashes might be drawn up or down from the outside, in the same manner, and with the same ease as in a common Cucumber-frame. Many persons, however, might object to the hotbeds at the sides. I would, therefore, suggest instead, that a sunk area 2 or 3 feet wide, reaching down to the foundations of the walls, should surround the building on all sides, to be filled with fresh stable-dung or tan, and boarded over to keep off rain. This would confer a double benefit—viz., warmth

and perfect dryness, and isolation to the walls. This manure would not be wasted. As regards damp from below there is no reason why the house should not be made as dry as the floor of an underground kitchen. The building should run north and south, and the valley roof, as designed by Mr. Geyelin, would admit the sun's rays at all periods of the day. The entrance door should be at the south end, the steps leading down to which should be provided with a trap-door, to be closed at night, and in frosty weather. The wall at the north end should be carried up to the same height as the side walls, forming a sort of parapet across the valley of the roof to protect it from cold winds. A Laurel or Privet hedge carried round three sides of the structure would form an additional screen. Any amount of ventilation may be given by means of the door and sashes. If the latter were double glazed it would be a great advantage, whilst the lowness and accessibility of the roof would at all times facilitate the application of a straw and tarpaulin cover when considered necessary. I really think a plan of this kind quite feasible, and that the temperature within need never be allowed to fall below 40° during the longest frosts. The house, of course, would only be applicable to certain purposes, but if it could be made to answer it would prove a boon to many.—ISLE OF WIGHT.

PREVENTING THE GOOSEBERRY CATERPILLAR.

In "our Journal" of the 22nd of March in last year I stated that I had just laid a thick coating of tan under my Gooseberry bushes, and that I had little doubt that its application for two or three seasons would, as in former instances, prove a "perfect cure" for that terrible pest the Gooseberry caterpillar. The result has thus far completely verified my anticipations. The scourge re-appeared last year, but in such diminished numbers that they were kept completely under by a little hand-picking. My crop was, of course, small, owing to the injury done to the bushes during the previous season, but all ripened well, and the bushes having now recovered their strength, I have every prospect of a good crop, which a second thick coating of tan will doubtless enable to ripen without injury from the caterpillar. Now is the time for applying the remedy, with which the surface of the beds should be covered to a depth of at least 2 inches. If the soil be heavy the tan may be beneficially dug in in the autumn: if light it had perhaps better be collected in a heap and burnt. After a couple of seasons a thin coating is generally sufficient to keep the enemy completely at bay. *Experto crede.*—A DEVONSHIRE BEE-KEEPER.

ORCHIDS FOR GREENHOUSE.

To "W. A. O.," who requests "a list of Orchids that will flourish in a cool greenhouse," I recommend Mr. Bateman's "Guide to Cool-Orchid Growing," (Reeve, 1s.); and Messrs. Backhouse & Son's "Catalogue of Greenhouse and Vinery Orchids," which he will receive by post on sending six stamps to them at York. This latter is beyond all comparison the most valuable treatise on cool Orchids yet published; for besides a descriptive and priced list of about 240 kinds, it gives details of cultivation, derived from the experiments of those eminent growers, which are of very great practical value.

This very day twelvemonth (March 17th, 1864), I removed the following species from the coolest end of a stove, where they had passed the previous six weeks with a minimum temperature of 40°, to a cool greenhouse, where, on a shelf close to the glass, the night temperature frequently went as low as 37° and 36°, and once 34°, in the course of March and April; while, on the other hand, the forenoon sun occasionally ran up the mercury to 80° and 90°, before I put up the summer shading. The interstices between the pots were stuffed with moss, which was kept constantly damp. On this half they remained till the end of November, when, the temperature having descended to 35°, they were removed again to the cool end of the stove. Here they have again passed the winter; the night temperature ranging mostly between 40° and 50°, never going below the former, nor above 54°. Most have done well several ways.—Calan-

the vestita failed, made only miserable little bulbs, which did not survive the winter. I remarked a fact (which Backhouse takes notice of and explains), that many of the plants showed not the slightest sign of making growth till the summer was well advanced. After the season's discipline, however, I expect they will be much earlier this spring: indeed, some of them are starting already.

These are the species in question:—

<i>Calanthe vestita.</i>	<i>Lycaste cruenta.</i>
<i>Cattleya citrina</i> (black; made stout bulb).	<i>aromatica.</i>
<i>Skinneri</i> (made flowering bulbs).	<i>Skinneri.</i>
<i>Corylogne cristata.</i>	<i>Odontoglossum citreum.</i>
<i>Cyrtocidium maculatum.</i>	<i>grande.</i>
<i>Coelia Baueriana</i> (flowered).	<i>Insleyi</i> (flowered).
<i>Dendrobium speciosum.</i>	<i>Oncidium leucostichum.</i>
<i>Epidendrum aurantiacum</i> (flo. bulbs).	<i>sphaerulatum.</i>
<i>vitellinum.</i>	<i>Sophranitis grandiflora</i> (black; flowered finely).
<i>Lælia albidula</i> (made very strong bulbs).	<i>Trichopilia suavis.</i>
<i>anceps.</i>	<i>Dias grandiflora</i> (with wetter treatment than the rest, flowered finely).
<i>furfuracea</i> (!)	

Most of these were small plants, scarcely mature enough to flower. On the whole I feel satisfied with the results, though the trial as to temperature was, perhaps, unwarrantably severe. I mean to repeat the treatment with them this season, only giving them a month longer in the cool part of the stove, and removing them to the greenhouse about the middle of April. I shall probably add to the number the following:—

<i>Calanthe veratrifolia.</i>	<i>Miltonia candida.</i>
<i>Cattleya Mossiae.</i>	<i>speciosa.</i>
<i>Cypripedium insignis.</i>	<i>Oncidium crispum.</i>
<i>venustum.</i>	<i>flexuosum.</i>
<i>Dendrobium chrysanthum.</i>	<i>bicallosum.</i>
<i>fimbriatum</i> (oculatum).	<i>Phajus Tankervillei.</i>
<i>nobile.</i>	<i>albus.</i>
<i>Kingianum.</i>	<i>Rodriguezia venusta.</i>
<i>moniliforme.</i>	<i>secunda.</i>
<i>pulchellum.</i>	<i>rigida.</i>
<i>Lælia Perrinii.</i>	<i>Trichopilia tortilis.</i>
<i>purpurata.</i>	<i>Vanda teres.</i>
<i>Maxillaria Harrisoniae.</i>	<i>Zygopetalum Mackayi.</i>
<i>graminea.</i>	

Thus I have named just half a century of Orchids out of my own small collection, to which I have either applied or mean to apply cool treatment. If your correspondent will accept my counsel and consult Backhouse's list, he will possess a far wider scope for selection; and will find that the genera *Cattleya*, *Dendrobium*, *Epidendrum*, *Lælia*, *Lycaste*, *Oncidium*, and, *facile princeps*, the glorious genus *Odontoglossum*, are profuse in fine species, which will thrive under a greenhouse regimen. May I not add, that you will be glad to learn the results of his experience?—P. H. GOSSE, Sandhurst, Torquay.

PRESERVING PEAS FROM MICE.

I HAVE discovered a most effectual method of preventing mice eating sown Peas. It may, perhaps, be useful to some of the readers of your Journal. If the Peas are soaked for about twelve hours in a strong mixture of sulphur and water previous to sowing, not only will the mice be prevented from attacking the seed, but the Peas will be stimulated in their growth by the immersion.—C. S.

CURIOUS EFFECT OF GRAFTING.—We extract the following from *The Naturalist*. "Some time ago, in a public garden of this place, a branch of Elm was grafted on an Oak in the expectation of obtaining a tree half of which would be an Elm and half an Oak. Contrary to the expectations of the gardener, however, the following was the result:—The tree commenced budding this spring, and when the leaves appeared it was found that each branch—nay even each twig, had both Oak leaves and Elm leaves growing upon it, in place of there being separate branches, each bearing a different kind of leaf. I will only add that the tree is in full leaf, and I have just obtained a cutting, which I intend to cultivate if possible; and I hope next spring to be able to inform the readers of the *Naturalist* of the result of my endeavours. I also enclose a sprig for your examination, and would like to ask, Is this a unique phenomenon, or has anything of the kind been observed before?"

It is certainly remarkable, yet not less strange than true.—T. G. H., *Olifton, Bristol, Sept. 1864.*

["The twig mentioned above has four secondary branches springing from it, and bears eight Elm leaves on the lower branchlets, and ten Oak leaves on the upper two. Can any of our readers state whether a similar occurrence has previously come under their notice?—*Eds. NAT.*"]

MR. ABBEY'S STRAWBERRY-HOUSES.

MR. ABBEY'S first figure (page 154) is, I suppose, intended as a Strawberry-house *in toto*. Well, I have no objection to the large accommodation here for the production of such a luxury as forced Strawberries, but how are we to get at them to water the plants or gather the fruit? He has unfortunately placed the best of his structures in the wrong place. I mean the small one occupying the middle of the house. Were it not for this one could with a good deal of trouble get at plants on the "suspended shelves;" but as it is, it is impossible to work any of them, but the two lower ones.

Though there is no objection to having plenty of accommodation for forcing Strawberries, I believe such a house as this is quite unnecessary, and, moreover, it would be comparatively idle for six months in the year. Had the centre been occupied by a slightly raised bed, it would have made a better orchard-house than the one figured as such.

Before leaving this house permit me to state, that some years ago I saw the plan of a Strawberry-house, the principal feature of which was a structure running along the middle of the house quite similar to the small one in this, with this difference, however, that the glass was only about 3 feet from it; the shelves did not come so low, and a sunk path all round it afforded ample head room. The vacancy under it was to be filled with fermenting material, in the first instance to stimulate a root-action in the Strawberry plants, and afterwards Sea-kale and Rhubarb placed on it for forcing. Such a structure, if only 30 feet long, and having but six shelves on each side, would hold about four hundred plants, which I imagine would be enough for a single batch.

Permit me now to allude to the other structures. "Strawberry shelves in a vinery." Here Mr. Abbey has ignored altogether the time-honoured and well-tryed back shelf, for a second edition of his suspended shelves, and not only so, but in his zeal for his pots, has actually forgotten the legitimate occupants of the house, for where are the Vines? Suppose for a moment they are bent along the front of the house, then when broken how are they to be got to their places? or where is there a place for them?

What gardener would recommend such a structure to his employer? or what gentleman would suffer such a weight of clay, iron, boards, and crockery to hang from the rafters of his vinery? Even if they occupied but the spaces between the Vines, where is the favoured locality in these islands that has so much sunlight to spare as these loaded shelves would obstruct?

"Strawberry shelves in orchard-house." This, as represented, will not commend itself to any one as an orchard-house; it is absolutely dangerous as a Strawberry-house. He has certainly put up a sufficiently high house, but then he has not given them (the orchard-house trees) the benefit of it, for in the only space left in this plan for them (the side borders) there is but 4 feet head room. He has appropriated their proper place, the middle of the house, to the means to get at the suspended shelves; but here I suspect the provision was unnecessary, for there is a great likelihood of the shelves and their burden coming down to him, if, as represented, they are all dependent from the upper shelf.

"Strawberry shelves in a Peach-house," are even more objectionable than in a vinery, for where are the Peach trees? Not trained to the roof, there is no place for them; not on the back wall, they would be useless there, with such an obstruction in front of them.—J. K.

[The figures at pages 154 and 155 were intended to represent shelves fixed near the glass in various structures for the forcing of Strawberries. They were not designed for vineries, for at p. 154 are these words: "Nothing is so good

as shelves about 15 inches from the glass—one along the front and another at the back of a vinery." Nor were they intended for orchard or Peach-houses; but, considering the great demand for room in most places, they were calculated to ease these structures by providing a house for forcing Strawberries. The structures best calculated to accommodate the greatest number of shelves were selected, being simply those which I had found from experience desirable for the purpose, and the only ones, in my opinion, that can economically accommodate a large quantity of Strawberries in a small space.

The structures best suited for the forcing of Strawberries are those with steep roofs; they receive more direct rays of the sun at the season of the year when the plants require such, they will accommodate more shelves than a flat roof, carry a greater weight, and the plants can be more easily attended to. It is a mere supposition of "J. K." that they were intended for any and every house, and his not being able to find the Vines, the orchard trees, and Peach trees, is because I was only writing about Strawberries. I was not writing of Vines, nor of orchard-house trees, nor of Peach trees, but of Strawberries, and placed them in the best position the structure appropriated to their growth afforded, being that where they can enjoy the sunbeams, and make the most of what is provided for their growth.

I set out with the intention of giving the Strawberries that which "J. K." finds I have done—a good position, and I state once for all they were all intended for Strawberry-houses. Provision had previously been made for their accommodation on shelves in vineries, one along the front and another at the back, then provision was made for their culture in houses separately devoted to their growth, it being presumed that the shelves in vineries, &c., were not sufficient to accommodate all the plants, and provision was also made for their accommodation in orchard-houses. True it is I did not state they were for "Strawberry-houses *in toto*." Some member of Parliament was said to be continually complaining of the press making him speak "what he did not mean, and leaving out what he meant to say;" but I have not a complaint of this kind to urge, for our friends at 171, Fleet Street have printed what I did not write as to the second, third, and fourth figures at page 155, I only being responsible for what is said of the first figure, and that is nothing, and I said nothing more of the remainder, for they were intended solely for Strawberry-houses, being such as I found best suited for providing the plants with a good position.* What the figures were intended to represent I will state as briefly as I can.

Fig. 1.—Strawberry-house. The shelves are 15 inches from the glass, fixed by holdfasts to the roof, one to each rafter; the rafters are those usually provided for houses with lights, and are supported with inch-iron tie-rods from rafter to rafter across the house, and two the whole length, one of them being halfway up the rafters. Rafters 7 inches by 3 inches, will carry both the lights and the shelves, whether the latter be fixed at 36, 42, or 48 inches apart. The tie rods should be fastened with bolts that go through the rafters. All the houses are built in the same substantial manner, and will carry the shelves and their burden very well.

"J. K." objects to this figure on the ground that "the plants cannot be watered, nor the fruit gathered." There is a stage in the centre of the house, of which he thinks highly, but I only esteem it as affording easy access to the plants in the good position, and use it to stand upon. Two of the shelves he can reach from the floor, according to his own statement, and the others may be easily watered and the fruit gathered by making use of the stage, for from it the plants are more manageable than on stages where you have to reach beyond the equilibrium. All parts of the house are easily reached from the stage.

His other objection is "that the house would be idle fully six months of the year." Well, the house would be occupied with Strawberries from December to June; Vine plants on both sides of the house, one to each rafter, would be introduced in May, and tied down along the sides of the house. When the Vines were regularly broken, and the second batch of Strawberries fruited, the former would be trained to the rafters, the shelves being removed, one of their main

* This is strictly true. Mr. Abbey put no descriptions to his drawings.—*Eds.*

features being that they are moveable. Now is the time to make a proper use of the centre stage by placing plants upon it, relieving the other houses, and enabling the cultivator to have finer plants in all. The advantages of *fig. 1* are, it is an excellent Strawberry-house for six months, and an excellent late vinery during the remaining six, its produce being two crops of Strawberries at a time when Grapes are raisins, stone fruits rare, Pears scarce, and Pines deficient in flavour, the only fruit then at its best being the Apple. Two crops of Strawberries would be worth something even in Covent Garden during the height of the London season, and the Grapes surely pay for the extra outlay in providing the shelves for the Strawberries.

"J. K." introduces us to a house of his own, one that he has seen (I tried mine), the chief features of which are that the plants are provided with a stage "only 3 feet from the glass," and the vacancy under the stage is filled with fermenting material "in the first instance to stimulate a root-action in the Strawberry plants, and afterwards Sea-kale and Rhubarb placed on it for forcing." It was some years ago when "J. K." saw this Strawberry-house, reminding me that it is now some years since I assisted at the turning of fermenting materials in a vinery, not thinking at the time that it was done expressly to stimulate root-action in the Vines which were in an outside border, which it was as likely to do as stimulate root-action in Strawberry-plants on a stage with a bed of fermenting materials under it, and also to destroy every leaf of the Strawberries, the young trusses, and the crop, if the steam were at all rank. Well, the house was 30 feet long, and held 400 plants, enough, says "J. K.," for a single batch; but what of the fruit? "J. K." forgets to tell how the house answered. This house is, I presume, given as a comparison. Granted the house *fig. 1* is 30 feet long, it would hold 1500 plants, in 44-inch pots for fruiting early in March, and 1000 in six-inch pots to fruit in April and May, or 2500 plants in all. They are not 3 feet from the glass, but in that good position for Vines, Peaches, all fruits, and all plants, especially those of low growth, 15 inches from the glass, and I have proved that the fruit is then more plentiful, finer, and better-flavoured than when grown on plants at a greater distance from the glass. In "J. K.'s" house he places the plants in the worst position, and occupies the best himself, increasing the difficulty of attending to the plants.

Fig. 2.—This shows one of those houses known as an early vinery, which might be furnished with shelves for the forcing of Strawberries, and thus obviate the necessity of erecting a house on purpose, the house answering all the purposes of a late vinery. The shelves in this house are as easily reached as those in *fig. 1*, by using the stage to stand upon. We have exactly accommodation for the same number of plants as in "J. K.'s" house—viz., 400, or forty on a thirty-foot shelf, and two crops may be had from this house by May, and a crop of late Grapes as well.

Fig. 3.—This will commend itself to many as a span-roofed Peach-house, it not being intended for an orchard-house, but a Strawberry-house; I being the last to admit that a house having four rows of hot-water pipes is an orchard-house. *Fig. 1*, I quite agree with "J. K.," would make a better orchard-house, and, being 24 feet wide, and 15 feet high in the centre, allowing for a raised border, and a corresponding length, would be something deserving the name of orchard-house; but it is very questionable whether it would produce more, finer, and better-flavoured Peaches than *fig. 3*, which is only 12 feet wide, furnished with a trellis at 15 inches (not 3 feet) from the glass, and the trees trained so as to produce the fruit on young wood of the previous year, instead of on spurs, as in the case of orchard-house Peach trees closely pinched-in. Perhaps "J. K." will tell us whether he finds trees trained so as to produce their fruit year after year on spurs, or those bearing on the young wood of the previous year, considerably shortened at the winter pruning, give the most, the finest, and best-flavoured fruit? also, which trees are the least liable to the attacks of insects, and which remain in a bearing state the longest, and are in every way the healthiest and longest-lived trees?

I may observe, with regard to *fig. 3*, that it admits of shelves on both sides, and accommodates sixteen shelves and eighteen rows of Strawberries. The irons to support the shelves go through to the rafter upwards, and to them

outwards, being fastened in both places with screws. The reason they are not so represented in the figure is, the upright part of the iron passes through the shelves, and cannot be seen from the floor, and so are those in *fig. 4*. The roofs of these structures being steeper, carry the shelves very well, the rafters being properly supported with tie rods. Five of the shelves, and six rows of plants, can be watered from the floor, and the remaining three by placing a plank across the tie-rods at 6 feet from the floor, a boy handing up the water; or a step-ladder can be employed, and half a dozen plants watered at the same time. This house would give two crops of Strawberries by May, when the shelves could be taken down, or they might remain, and numbers of Primulas, Cinerarias, Calceolarias, and other plants be forwarded thereon. The shelves being taken down, and Vines in pots at hand, these would be trained one to each rafter, they having been previously accommodated in a cool house. Between them space will be found for young plants raised in January from eyes, and these, if then transferred into their fruiting pots (the curves from the shelves being the material for them, the Strawberries for another season's forcing also liking the same), will form strong canes to fruit in the place of those now fruiting. Thus we have a crop of Grapes in October up to Christmas, and two crops of Strawberries, besides Vines for fruiting another year.

Fig. 4.—This is, ordinarily, a lean-to Peach-house, now converted into a Strawberry-house, wherein "J. K." will see one of his "time-honoured and tried back shelves," and eight more on the roof. It is simply one-half of *fig. 3*, and, like it, could be employed for Vines after forcing Strawberries, as a Fig or Melon-house, or be used for plants, as thought proper.—G. ABBEY.]

[We have, as we invariably do, omitted, as much as possible, all sarcasms and all ridicule from this attack and defence. It is extraordinary that men cannot search for truth without endeavouring to wound those who are devoted to the same research.—Eds.]

THE EARLY TEN-WEEK POTATO.

SOME twenty—aye, or more—years ago, I received from a Mr. Chatwin, a Potato merchant at Hungerford Market, near Charing Cross, a list of different varieties of Potatoes. I was quite astonished to find such a long list of names, as I then thought there were but very few sorts of Potatoes known. I remember being struck with the name "Early Ten-week," for I thought it must be something new and good. I therefore ordered a peck, for which I paid some 10s. or 12s. They were carefully planted and attended to, but to my great disappointment a great portion of them proved twenty-week rather than ten-week; in other words, they were dreadfully mixed with some late sort. Some few, however, were really the true thing, as they were dwarf and very early, reminding me of a very old sort that had been here for generations, and called the Early Betsy. I mention this because we have, I think, had for many, many years some dwarf early kind of Potato under different names—almost a species in character. Well, my selected Ten-weeks proved better, or we thought so, than Betsy, and she, poor old girl, was dropped. Many old friends have in like manner been dropped, only because new ones have sprung up. A truce, however, with moralising. I hate essay-reading and trite moralising. What a number of moral sermons have I heard from our old pulpit! They were, I suppose, fashionable when I was a youth; I know they were very common. What a delight it was to hear "Lastly, my brethren!" and how we bolted from the dear old church on a fine summer's day!

Well, "too far have I got," as a young German from Vienna, who was coming to stay with me, wrote on a large card and held it before the old coachman's eyes when he saw my house, which he guessed was mine from the description of it given to him. Alas, poor old Gibby! how full of fat and fun he was! "Too far have I got." What does he mean, John? (to his guard). "I'm blowed if I know," says John. Again the card was pushed before Gibby's nose. "Too far have I got?" this time with a note of interrogation; but coachee did not know the "little crooked thing." A shake of the head and a whip of the horses, and the coach

howled along to Bishop Stortford, where a German lady was found, who told the unlucky German that he had got too far by four miles; and so the next morning he was brought back and safely deposited at my house. That great card which I saw held before coachee's eyes, who stopped a minute on the brink of the hill "dubitating," will never leave my memory, nor the hearty laughs we had with Brifhaut about it when he had learnt English.

Well, I have got too far, and have left Early Betsy and ditto Ten-week somewhere. I must "resume the thread of my interesting narrative," as the novelists say, by stating that after selecting the true kind from the medley received, I cultivated the sort to some extent, and distributed it in the neighbourhood—among others to Mr. Moffat, who exhibited this kind at South Kensington last autumn, and obtained a prize for it. I mention Mr. Moffat's name in conjunction with the Early Ten-week Potato, because he corrected an error into which I had fallen. When the Early Handsworth was sent out a few years ago I hastily concluded that it must be the same as the Early Ten-week; but Mr. Moffat says that it is a much better sort both in flavour and earliness. I have thought it worth while to give the history of this old and interesting Potato; and as the true sort is scarce, to observe that its usual form is a blunt oval, but many round tubers are usually found. It is very early, its habit dwarf, and it does not bloom. Probably it is one of our best early round Potatoes, and is quite worthy of culture for forcing and for a first crop.—T. R.

HADSOR HOUSE,

THE SEAT OF — GALTON, ESQ.

THIS residence is one mile from Droitwich. At the entrance gates is a handsome lodge, the drive from which winds along the side of a hill between plantations and groups of Furze, with a Gothic cottage nestled among trees below to the right; on the left is ground, diversified in surface, rising above the drive, and planted with groups of forest trees, interspersed with handsome specimens of Hawthorn. The drive then passes through a large plantation of Oaks, extending on the right through a deep dell, and on to the house. On the west side of the house the terrace was furnished with large specimens of variegated Aloes in vases, and on a lower level are flower-beds on grass. On the north side below the terrace is the Rose garden furnished with all the best sorts of Roses. Attached to the house is a conservatory 65 feet long by 36 feet wide gay with Passion-Flowers, *Tecoma jasminoides*, *Mandevilla suaveolens*, *Brugmansia sanguinea*, and *B. suaveolens*, planted in the border. The *Brugmansia suaveolens* was the finest specimen I have ever seen. It was 15 or 16 feet high with about three hundred large, white, trumpet-shaped flowers hanging down from all parts of the tree. The succulence and rapidity of growth apparent on its branches, and the prodigious numbers in which it develops its gigantic, snowy white, and sweet-scented blossoms, mark it as one of the most magnificent of conservatory plants. This fine exotic is too much neglected in collections on account of its liability to the attacks of the red spider. Having hitherto seen but poor sickly specimens with straggling flowers of tawny hue, my delight at beholding this Peruvian beauty in all its splendour may be conceived. Many of the blossoms were 12 inches in length, and 7 or 8 inches across the mouth of the flower. There were also *Passiflora edulis* bearing fruit used at the dessert, fine specimens of Camellias, and Orange trees. In a niche in the centre of the conservatory were a marble statue of Venus, and a fountain. There was great taste displayed by Mr. Dalrymple, the head gardener, in the arrangement of the plants in the border, and grouped beside the pathways. A terrace walk leading from the flower garden to the temple is ornamented with vases; and on the right a peep may be obtained of the pleasure grounds and a lake at the bottom of the lawn, with all sorts of water fowl.

The pleasure grounds contain some fine specimens of Spruce Firs well feathered to the ground; *Pinus excelsa*; *Samach*s in their autumn scarlet livery; *Pinus pinaster*, infested by wasps to such a degree that Mr. Dalrymple feared the trees would be ultimately killed by them, although he was adopting every means to insure their destruction; also,

Turkey Oaks, *Wellingtonias*, *Cryptomeria japonica*, 25 feet high, and 16 yards in circumference; *Taxodium sempervirens*, 25 feet high; and a Deodar Cedar, 27 feet high. There are Cypresses, Red Cedars, *Ilexes*, and Turkey Oaks, with other trees and shrubs of diversified foliage in another portion of the pleasure grounds to represent Italian scenery.

After admiring for some time the rich and gorgeous scenery produced by the autumn tints of the foliage we descended to the fernery, composed of old roots and stumps of trees with arches to walk under, to admire the various British species of Ferns that are planted in the crevices, and kept moist by an underground pipe from the fountain in the conservatory, the water from which can be made to trickle over them when required. The plumed Ferns, but lately so light and green, were then clumps of blackened fronds hanging over the old roots, whose nakedness they covered so tenderly during summer. On the edge of the lake is a hollow old Oak with a seat in the middle, where a person may sit and contemplate the manifold beauties of Nature around him. The following lines of Cowper, who had a keen sense of the beautiful, are applicable to this picturesque object.

"Thou wert a bauble once, a cup and ball,
Which babes might play with, and the thievish jay,
Seeking her food, with ease might have purloined
The autumn nut that held thee, swallowing down
Thy yet close-folded latitude of boughs,
And all thy embryo vastness at a gulp."

Time made thee what thou wert—king of the woods,
And Time hath made thee what thou art."

Further on is a grass walk with a Yew hedge at each side leading through a grove from the ornamental water to the keeper's lodge. Returning by the terrace walk from the bullring to the bear, so called on account of a representative of the grizzly animal at the end of the terrace walk, we pass through a plantation of trees and shrubs to the kitchen garden. The horticultural structures are a span-roof Orange-house 36 feet by 27 feet, containing good specimens of Orange trees, Lemons, and Citrons; a greenhouse 36 feet by 14 filled with Azaleas, &c.; three vineries, ridge-and-furrow, the middle one 48 feet by 17, with a high roof, and the other two, one at each side of the middle one, 42 feet by 15 each. They contained good crops of Muscats of Alexandria, Black Hamburgh, and Barbarossa, bunches of the latter averaging about 4 lbs. each. There are besides a Peach-house 80 feet long by 6 wide, with healthy Peach and Nectarine trees that had, in the summer, borne fruit of the average weight of 8 ozs. each; a range of Pine-pits 72 feet long by 16 wide, for fruiting and succession Pine plants, and containing some good examples of Queens, Black Jamaicas, and Smooth Cayennes; and a range of pits, also 72 feet long by 16 wide, for forcing French Beans, Strawberries, Potatoes, and many other things, all heated by hot water.

These grounds are naturally varied and tastefully arranged. The woods, pleasure grounds, roads, walks, drives, and plantations with the kitchen garden, horticultural buildings, and the various scenes connected with them, have been laid out in the best manner to give a pleasing succession, and a harmonious effect to the whole.—WILLIAM KEANE.

SOIL FOR RHODODENDRONS.

HAVING just read Mr. Robson's article on Rhododendrons, and having had some experience in growing them in uncongenial soils, I think I may be able to give some useful hints or information to those similarly circumstanced.

When living in Ireland on a limestone formation surrounded by large black peat bogs, which furnished excellent fuel not only to the poor but to the gentry around, I tried this turf mould, or "bog stuff" as it was called, for Rhododendrons, but they barely existed in it, and never flourished, though it formed an excellent manure for most vegetables and flowers. Several of my neighbours attempted to grow them, but with no better success. One person, however, had a large bed of them growing most luxuriantly, and his mode of proceeding was this: He dug a large hole or pit several feet in diameter and about 2 or 3 feet deep, and this he filled, not with the rich-looking black stuff which others as well as myself had used, but with the surface soil

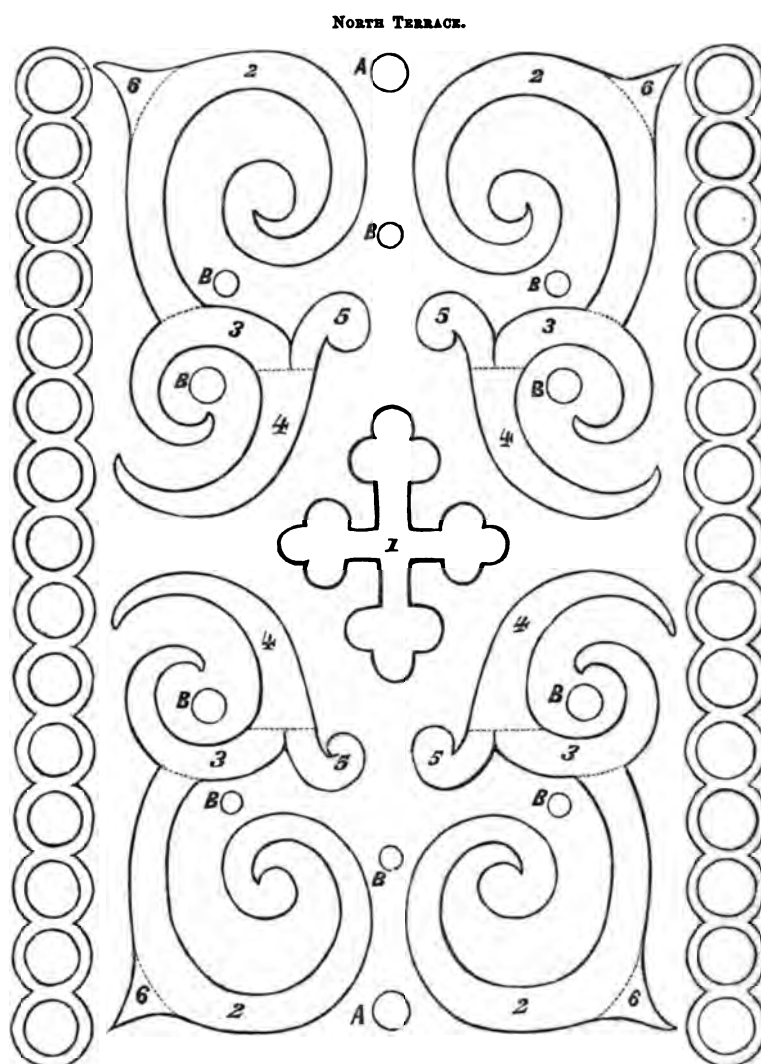
if I may so call it, of this black stuff. He skimmed the surface of the bog, taking Heath, roots, and all that grew there, and filled his pit with them, chopping them up, and his Rhododendrons flourish and flower there most perfectly, while they fail all round him. I did not hear of this plan until I had left the neighbourhood, so did not try it myself as I should otherwise have done.

I am now living within a few miles of Dublin (south side), on a granite formation, and I find that the numerous nurserymen around get all their Rhododendron mould from some mountains eight or ten miles off, paying 6s., or at the least 5s., for a small cartload of this. I have myself had to pay at times 8s. a-load. This stuff is, like my friend's, composed

of the top, or surface sod, from 3 to 6 inches deep, with Heath, roots, &c., growing on it; and in this quite pure the hybrids, as well as the common kinds, grow perfectly. All the neighbouring gentry grow them in the same manner and with equal success. The nurserymen tell me that the best substitute for this is leaf mould pulverised; but the growth of the plants in it is so far inferior that they find it well worth their while to pay for this stuff drawn from a distance. In some parts of Ireland Rhododendrons grow so freely without culture that I have had sods of self-sown seedlings sent to me from thence.

I agree with Mr. Robson that where the Foxglove grows they will grow.—A. B.

FLOWER-GARDEN PLAN.



TERRACE.

THE above design is from Mr. Thomas Sampson, Houndstone House, Yeovil, and is proposed to be planted this year as follows:—

- 1, Centre, *Centaurea candidissima*.
- Second row, *Amaranthus melancholicus ruber*.
- Third, or outside row, Mrs. Pollock Geranium.
- 2, Variegated Geranium Alma.

The circles in the centre of the chain, along each side, *Stella Germanica*. Rings surrounding the circles, and forming the chain-pattern, *Cineraria maritima*.

A A, Golden Chain Geranium; B B, *Centaurea gymnocarpa*.

- 3, Christine Geranium, pink.
- 4, *Calceolaria Aurea floribunda*, yellow.
- 5, Purple King Verbena.
- 6, The four corners yellow.

The only alterations we have suggested are to continue the chain along both ends, if the position will admit of it, leaving an opening in the centre of each end; to plant the small circles with upright evergreen shrubs; and, instead

of dividing the four scrolls into separate colours, to plant the centre bed and chain-borders with scarlet and white, so that the scrolls might be crossed with pairs of purple and pairs of yellow.

LA CONSTANCE STRAWBERRY.

THE drawbacks to La Constance Strawberry, as stated by Mr. Radolffe, resolve themselves into these:—

1. It is not sufficiently hardy.
2. It does not produce runners enough.
3. The runners not being produced till after fruiting, cannot be used for autumn planting.
4. In summer the leaves are scorched by the sun.
5. The fruit is ripened simultaneously, and
6. When ripe it must be gathered at once, and eaten immediately.

If any of these objections were founded on facts observed in different situations, La Constance would not be worth retaining in cultivation. As to the hardness of the plant there is only one opinion, and that is in conformity with Dr. Roden's; besides, the plants have stood the test of the severe winter of 1860-61.

As regards the second point, it was settled fifteen years ago, and the principle then laid down is recognised as correct—that to send out runners moderately, and to do so after the crop has been gathered, constitute two of the greatest merits which a Strawberry can possess. If the runners are not fit for planting in the autumn of the year in which they are produced, they are left round the plants to gain strength, and are in the best possible condition for planting in the following March or April. If carefully planted in spring, as many good fruit can be depended on from them in the following July as from any other variety planted in autumn. If the above assertion appears doubtful to any of your readers, I will give them twenty-five runners of La Constance if they will defray the expense of carriage, which would not amount to more than from 1s. to 3s. according to distance.

During the ten years in which I have grown La Constance I have never observed, either here or elsewhere, that the leaves are liable to be scorched by the sun, and such a peculiarity has never been remarked by any of my correspondents. But if the leaves have been anywhere found to burn, I believe the cause to have been ill-timed watering, or planting and transplanting without having first removed the ball of earth from the roots—a matter of such elementary importance as only to require mention.

Does the fruit of La Constance ripen all at once? The contrary is the fact; for it is well known to Strawberry growers that the bearing of this variety lasts for a fortnight to five-and-twenty days, and that the last-gathered fruit are as fine as the first, if in dry weather the plants are well supplied with water.

The sixth objection rests on no better foundation than the five preceding it. There does not exist, so far as I am aware, a Strawberry of which the fruit will keep so long as that of La Constance. It is precisely on account of its continuous bearing and long keeping, that experienced growers near Brussels have planted it largely for supplying the market.

If any of your readers who has grown La Constance for two years does not agree with what I have stated in this article, by making his conclusions known, he will, I think, render a service to Strawberry-growers in general, and contribute to the solution of the questions which have been raised.—J. DE JONGHE, *Brussels*.

CLIMBING DEVONIENSIS AND ROSE SPORTS.

It would seem that a few more remarks are needed to satisfy the minds of some of your readers that the climbing *Devoniensis* Rose is really something distinct from the old well-known variety. Owing to a supposition, arising out of a letter from Bath in your columns, that it is the same grown under certain conditions, I have had a package of fifty-two plants returned to me.

I must adhere to what I have already stated that I have proved it to be a most distinct sport, now thoroughly fixed, from our old friend and favourite, and of so distinctive a character as to be honestly called the Climbing *Devoniensis*, if a *Devoniensis* may be so called which equals Cloth of Gold in vigour of growth and habit of climbing, with the hardness of Gloire de Dijon or a Hybrid Perpetual.

It is interesting to trace the origin of the sport, and I was not aware that it could be done until I read Mr. Pavitt's letter in your paper. I am, therefore, most happy that he

should have the credit, according to his statement, of having obtained the sport from the Celine stock. The history of the Rose as far as I am concerned is simply this: During a journey on Rose business in some of the neighbouring counties I found that several gardeners possessed what they called a strong-growing *Devoniensis*. I did not visit Bath in my rambles, nor have I the pleasure of knowing Mr. Pavitt personally, but hearing that he had some stock of this strong-grower, and being particularly interested in the *Devoniensis* Rose, I sent to purchase some buds from him, wishing to prove it for myself, not however with the idea of anything distinct. Many of the buds failed, but out of the living ones about two-thirds came not distinguishable from the old variety, the rest assumed a very distinct and remarkable habit. These were again very carefully budded on suitable stocks, and I soon perceived their decidedly running character which has been again improved by budding.

And now a word on its hardness. Out of a piece of more than 3000 buds and shot plants, though they have been many times covered with ice during this late most inclement and trying season, and buds of *Narcisse* and others have been killed near them, I cannot perceive the slightest injury inflicted on one of them by frost.

Although I have myself budded many thousand *Devoniensis* on the Celine without such a result, I cannot but feel gratified that this magnificent climber has been obtained from that stock, which I was the first to prove an excellent one for budding upon more than twenty-five years since, and to introduce publicly for that purpose, challenging Mr. Rivers to try it against his *Manetti* stock. Though the *Manetti* has proved so invaluable, yet the Celine is equally so for *Noisettes* and some varieties.

A few years back I obtained a sport from *Elise Sauvage*, by budding it on the Celine, the shoots came from 3 to 4 feet in length and were fixed. The foliage and buds were exact counterparts of the parent, but without the beautiful orange-coloured centre so charming in *Elise Sauvage*, so that we subsequently decided not to work it.

While on the subject of sports it may be interesting to mention that in the year 1840, observing a running or barren shoot on a plant of the old *Aimée Vibert Noisette*, I immediately budded it on the Celine and fixed it, and I had the pleasure of first sending it to Mr. Rivers as a climbing *Aimée Vibert*, which character it has since maintained.

In closing I would earnestly impress on my brother Rose-growers and budding friends to see that they work the Hybrid Perpetuals only from flowering shoots, as there is a tendency, now that class of Roses is so luxuriantly grown on root stocks, to throw them into shy autumnal bloomers by budding from excessively long or barren shoots.—HENRY CURTIS, *Torquay*.

NUMBER OF WORKING HOURS FOR GARDENERS.

WILL you inform me the number of hours' work per day that a master has a right to expect of his gardener? I hold that ten hours' work per day during the summer months, say from 6 o'clock A.M. to 6 P.M., with two hours for meals, is not too much when we consider the short days during winter.—W., *Yorkshire*.

[We agree with you that from 6 A.M. to 6 P.M., with two hours for meals, are very good hours during the summer months. If the gardener lives at a distance from his work, forty minutes may be required for breakfast instead of thirty minutes, and the same for tea—say breakfast at 8, dinner one hour, at 12, and tea at 4. In many cases where the gardener has to go a distance, he foregoes the tea, or takes something to eat with him, and perhaps a glass of beer instead. Though we say this much, we would advise every gentleman who has a gardener worth keeping, not to be too particular at all times as to these hours. A gardener who sees that things require to be done will not be watching for the clock to strike 6; he will rather feel annoyed that the time has gone too quickly, and to keep things right will often work much later, and come earlier in the morning too. There are many things which are better done in the cool of the evening and the haze of the early morning; but if a

gentleman shows annoyance if a gardener is either behind 6 in the morning or locks up at times before 6 in the evening, the gardener, with all due respect to his employer, and without being anything of an eye-servant, may in return rigidly keep the prescribed hours, and yet not be able to give himself or his employer the same amount of satisfaction. Still, if only one or two men are employed, it is best in general to keep to these regular hours. Where a number of men are employed, whatever the time agreed upon, that time should be rigidly kept without any irregular deviation. Few things are more annoying, than to stand on a morning for ten minutes or half an hour waiting for men to come; or to see men only appearing to work, that the job may be drawn out until the hour strikes at night. The give-and-take principle will generally be found to work the best; but when the gardener takes back a little time he will act wisely to do so with the full knowledge and consent of his employer. There will be no disappointment to the latter then, if he does not see him at either of the hours referred to.

It is now happily becoming common for mechanics and workmen to leave off work at an early hour on Saturday. In most cases this would be unsuitable in gardens, but that is no reason why the gardener should not have a holiday at other times, and especially when he works often cheerfully before and beyond his hours. We hold then with "W.," that from 6 to 6 are very general and reasonable hours; but if that is rigorously insisted on, it cannot be expected that a gardener will long continue to do necessary jobs beyond these hours, unless, indeed, he is paid for that overtime. In all gardens of large extent where there is much of this work in extra hours, it is the most satisfactory plan to pay for it, and then strictness to hours may be insisted on without any want of kindness on the one hand, or respect on the other. Even then we know from experience, that a holiday freely given is anything but a loss to the employer. It often makes all the difference between working as a matter of duty, and working as a pleasure, from the heart-felt desire to give satisfaction to those we respect—a very different thing from merely filling up the time until the clock strikes. Knowing and feeling all this, we are great advocates for regularity in time, so much so, that we would have all deviations regular and a matter of thorough understanding between the master and the servant.]

DR. HUGH FALCONER.

THIS eminent naturalist was born at Forres, in Morayshire, on the 29th of February, 1808, and was, consequently, at the time of his death in his 57th year. He was educated at King's College, Aberdeen, where he took the degree of A.M., after which he studied medicine at the University of Edinburgh for four years, and became M.D. in 1829. Having been nominated to an assistant surgeoncy in the Bengal Army, but not having attained the requisite age, he employed the interval in assisting Dr. Wallich with his Indian herbarium, and in the study of geology and palæontology.

In 1831, he was sent in charge of invalids for the sanatorium of Landour, in the Himalayas, and passing through Suharunpore, where the botanic gardens were then under the superintendence of Dr. Royle, a friendship was soon formed between the two, and on Dr. Royle's leaving India, Dr. Falconer was appointed his successor. "Thus," says the writer of a memoir of him in the *Athenæum*, "at the early age of twenty-three did he find himself advanced to a responsible and independent public post, offering to a naturalist the most enviable opportunities for research; so fertile was the Indian service then in chances to rise for any young officer who chose to make the exertion. Suharunpore is situated between the Jumna and Ganges rivers, outside the belt of the Tarai forest, which lies between the mountains and plains, and is distant about twenty-five miles from the Sewalik hills, beyond which rise the Himalayas. It is thus most favourably situated as a central station for natural history investigations,—the rivers, plains, forests, and hills teeming with life in every shape, and the range of elevation combining, within a short distance, the features and productions of tropical, temperate, and alpine regions insensibly blended. Being a remote provincial station, with only half a dozen European families, the white man had to draw on

local means in all emergencies where the appliances of civilised life were required; but the intelligence, docility, and exquisite manual dexterity of the natives, backed by their faith in the guiding hand of the European, furnished an inexhaustible fund of resource. To construct, for example, a barometer for mountain explorations, broken tumblers were melted and blown into a tube, mercury was distilled from cinnabar purchased in the bazaar, a reservoir was turned out of boxwood felled on the mountains, and finally a brass scale was cast, shaped, and even graduated, by a native blacksmith, under the superintending eye of the amateur. Such discipline was of value in training the young officer to habits of self-reliance, and to kindly relations with those among whom his lot was cast, and no doubt contributed to that great fund of information for which Falconer was remarkable."

Here he pursued his geological and palæontological researches, investigating, in conjunction with his friend, Sir Proby Cautley, the fossils of the Sewalik Hills; and the result of their labours was their discovery, jointly with Lieuts. Baker and Durand, of a sub-tropical mammalian fossil fauna of unexampled richness and extent.

A commission having been appointed by the Indian Government in 1834, to inquire into the fitness of India for the cultivation of Tea, and Dr. Falconer having recommended the attempt, plants were imported and placed under his charge. Since then the cultivation of the Tea plant has extended over a large portion of northern India and Assam, and is still extending.

In 1848, he was appointed to succeed Dr. Wallich, as Superintendent of the Calcutta Botanic Garden (now left little better than a wreck from the effects of the terrible cyclone of last year), and whilst holding this position he recommended the introduction of Cinchonas into India, pointing out the hilly regions of Bengal and the Neilgherrie Hills, as the positions most likely to insure the successful cultivation of these invaluable medicinal plants. Years afterwards this suggestion was carried out, and there are now many thousands of plants both in India and Ceylon. In 1855, Dr. Falconer came home and continued his favourite researches among fossil remains up to the time of his death, which resulted from an attack of acute rheumatism, coupled with bronchitis, terminating in congestion of the lungs. His writings were chiefly scattered over the *Geological and Philosophical Transactions* and other scientific Journals; but, to quote the words of the writer in the *Athenæum*, "the work which he published was but a small fraction of that which he actually accomplished. The amount of scientific knowledge which has perished with him is prodigious, for he was cautious to a fault; he never liked to commit himself to an opinion until he was sure that he was right; and he has died, in the fullness of his power, before his race was run. Those who knew him well can best appreciate his fearlessness of opposition when truth was to be evolved, his originality of observation and depth of thought, his penetrating and discriminating judgment, his extraordinary memory, his scrupulous care in ascribing to every man his due, and his honest and powerful advocacy of that cause which his strong intellect led him to adopt; whilst they, more than others, will have occasion to deplore the death of a staid adviser, a most genial companion and a hearty friend."

FRENCH VERSUS ENGLISH ASPARAGUS.

I COULD not sooner reply to the observations of our friend "G. A.," in your No. 197, because, to be very candid, several of my friends, interested in the discussion, insinuated that I might be wrong in my estimation of French Asparagus, which they had considered to contain more white on the shoots than did the English. I therefore determined to write to my French friend in whose gardens I first saw the beds laid down by L'Hérault, and who is himself a very fair horticulturist. I think his letter will be interesting to your readers, and, therefore, give you a translation of it.

I cannot consider "G. A." quite fair to me, when he writes—"We do not measure the value of Asparagus in England solely by its appearance, but according to its utility." Such a remark appears as though he intended your readers to infer that I did, whereas, nothing I have

and warrants such a conclusion, and after perusal of my friend's letter, it will be seen that utility, by which I presume is meant the larger amount of edible matter produced enters as a large item in my argument.

"G. A." has, probably, never eaten French Asparagus under the favoured conditions described by my correspondent; but he may have done so at some restaurant in Paris, if he has been there, or from some of our markets eight and forty hours, probably, after being gathered, after being subjected to a long voyage, and badly packed, and badly cared for. He will forgive me, therefore, if I hope he will say no more about "stick liquorice," or the "roots of an old Elm tree"—two comparisons quite irrelevant to the subject. Upon one point I will not presume to dispute with him—viz., his assertion that, "As fine Asparagus has been grown in England as was ever grown in France, if that alluded to be the heaviest grown there;" I suppose him to be a horticulturist by profession, and will not enter into the lists with him. I can only say, that neither I nor any of my friends, who have been at a great many of our best shows, have ever seen anything approaching to them. He appears to look on me as one of those who think nothing good in their own country. I beg to assure him, that I am as out-and-out an Englishman as he can be, only I do not disdain to learn from any one of any country who can impart knowledge to me. So I hope he will shake hands with me.—H. S. WATSON, *Cottage, Charlton.*

Extract of a letter from M. Carlos Forer, of Margency.

"February 26.

"L'Hérault is beginning to plant out Asparagus, and I have, therefore, ordered him to send you at once what you require. Those who object in THE JOURNAL OF HORTICULTURE to your estimate of French Asparagus, may say what they please, but I can bear testimony that L'Hérault grows it to perfection. There are some amateurs who maintain that that with green ends is preferable to the rose and white, as grown by him, but we are certainly not of that opinion.

"To eat Asparagus, however, in perfection, a few precautions must be observed:—

"1st. It should be gathered before the rising of the sun, and should be eaten during the same day.

"2nd. If required to be kept twenty-four hours, it should be put into fine and rather moist sand, leaving 2 or 3 inches only exposed.

"3rd. Care must be taken after gathering and cleaning it, neither to allow it to be wetted nor to be exposed to the sun.

"Our Asparagus, although planted by L'Hérault, is neither so long nor so thick as that grown under his immediate supervision, but it is very fine and very excellent, and in answer to your special question, as to the quantity edible, I should say that we eat nearly all of it. I am quite sure that not 2 inches goes from the table. I can very well understand, that the case is not the same with that eaten at the hotels and restaurants of Paris.

To sum up. If the English be equal to the French, how happens it, that in the season it is the English who are the great buyers of it in the Halles of Paris, at from 25f. to 30f. the bundle, and from whence they send it to the London markets to be eaten by your rich consumers, who do not and cannot get it as I describe it, owing to the length of time that must elapse before it can be brought to their tables; and it is for this very reason that L'Hérault is so anxious to find a London agent, as when the railway passes Argenteuil, which it will do shortly, he will be enabled to cut it and have it eaten in London within the twenty-four hours.

WORK FOR THE WEEK.

KITCHEN GARDEN.

At the time of earthing-up any of the crops strew a little soot close to the stems of the plants; this will prevent slugs harbouring there and nipping them off under the surface of the soil, which they are very apt to do in the early part of the season. Loosen the earth between the winter-standing crops, and keep every part of the garden free from litter. Asparagus, the general spring dressing, if not yet done, should no longer be delayed, as the roots will now begin to move. Beans, make another sowing; the Longpod is a

prolific sort, but the Green Windsor has the best appearance when sent to table. Earth-up the early crops. Cepsious, pot-off the young plants as soon as fit and place them in a hotbed frame; they are very subject to the green fly, which should be destroyed as soon as it is observed. Carrots, the weather is now favourable for getting in the main crop. The Early Horn is an excellent sort both for early and late crops, and is much better adapted for many soils than any of the others. Celery, prick-out the early-sown into boxes or on a slight hotbed; when it has taken root give air at every favourable opportunity. Cucumbers, as soon as the frames are uncovered in the morning give a little air for an hour, when they may be closed again till the day is further advanced; if air has been given to the frames all night they may be closed for an hour or two. As soon as the principal shoots have reached the sides of the frame, do not allow any of the laterals to grow more than two joints before being stopped. Kidney Beans, make another sowing in pots. Keep the bearing plants frequently syringed to check red spider. Lettuce, some of the best plants that have been wintered in frames may now be put out, some under a south wall and others in a more open situation. Onions, sow the main crops if not already done; if very large ones are required plant the very small bulbs of last year, or the autumn-sown plants, in very rich ground. Larger Onions may be grown by the following method: Well tread the ground, and lay 3 inches of very rotten dung upon it; on this sow the seed, and cover with a little fine earth. Peas, stick the early crops as soon as they are earthed up; a few small Hornbeam boughs with the leaves on may be stuck on each side of the row, this will protect them from cold winds. Purslane, make a sowing on a warm border. Radishes, sow for successional crops; the Turnip-rooted sort may now be sown. Rhubarb may be forwarded by placing a hand-glass over the roots. A little litter should be laid round the bottom of the glass to prevent the ingress of cold. Savoy, make a good sowing of the Dwarf Green, which is best for general purposes. Salsafy and Scorzonera should be sown in drills from 9 inches to a foot apart. Now the weather is favourable for the purpose clean and move the ground between the rows of Lettuce, young Cabbage, autumn-sown Onions, Garlic, Shallots, and other winter-standing crops; clear the garden of all rubbish, and let general neatness prevail; lay down and roll the walks if they have been loosened by the winter.

FRUIT GARDEN.

When Peach, Nectarine, and Apricot trees are coming into flower, put up coping-boards and curtains, or nets, or, in the absence of these, a few spruce fir boughs may be stuck about the trees. Continue re-grafting bad sorts of Apple and Pear trees. Securely stake newly-planted standard fruit trees, nothing is more injurious to them than being blown and twisted about by the wind.

FLOWER GARDEN.

Sweep and thoroughly clean lawns, and give them a double rolling with a heavy roller, to render the turf smooth and solid. If any alterations or planting still remain unfinished, every available hand should be concentrated on this work so as to complete it as soon as possible. Where necessary stir the surface soil of beds planted with bulbs, so as to keep it open and friable, and also to give it a clean, neat, and fresh appearance. For small and suburban gardens, the white Arabis and the purple Aubrietia are very ornamental, especially for small rockeries. Pansies make showy border plants; Anemones may still be planted; all the species of Phlox are well adapted for these gardens; the Lily of the Valley will fill a shady corner; Pæonies are fine showy plants where there is plenty of room, but will not do well in very small gardens; Geum coccineum is a good plant for a small border, so is the yellow Alyssum, also the double Rocket. All the varieties of Pinks, and Carnations, and Larkspur, the variegated Monkshood, and Pentstemon gentianoides are very showy plants; the Canterbury Bell will flower in August, as also French and African Marigolds. In September, Dahlias, Salvias, Verbenas, and other half-hardy plants will furnish a constant succession of flowers. If planted in May, the common Fuchsia flowers the most of the summer and autumn. Asters and Chrysanthemums should not be forgotten for a late display.

GREENHOUSE AND CONSERVATORY.

Proceed as diligently as possible with the repotting of

such of the hardwooded greenhouse plants as require it, so as to afford them every chance of making a vigorous growth. Be careful, however, before potting to have the ball in a nice moist state, and avoid giving large shifts to weakly growers. Endeavour to keep the newly-potted specimens together as much as possible, keeping the house rather more close and moist than usual. See that softwooded plants, as Pelargoniums, Cinerarias, &c., are allowed plenty of space and kept perfectly free of insects. Give air freely on every favourable opportunity, but do not allow cold winds to blow over them and disfigure the foliage. Let the occupants of the conservatory-beds and tubs receive that attention which is demanded by all greenhouse plants at this season, especially in regard to the supply of fresh soil and other necessary stimulants to active growth. *Mandevilla suaveolens*, the *Kennedya*s, *Passifloras*, and *Bignonia*s will require regular supplies of water, and, possibly, further supplies of rich mould. While the variable weather which usually characterises March continues, attention must be directed in these structures to maintaining a uniform and moderate temperature. The heavy showers and boisterous gales which frequently occur at this season, succeeded by intervals of mild weather and brilliant sunshine, render some management necessary. Fires should be dispensed with as much as possible. On still nights the houses may be damped and the syringe used, avoiding the plants in flower. Soil containing a considerable portion of decomposed vegetable fibre must obviously be more suitable for dwarf-growing plants, the natural habit of which leads us to suppose that such soil, existing on the surface of the earth must form, from its being readily available to them, their congenial and natural food.

STOVE.

Proceed with the repotting of such plants as require it, and give all necessary attention to those in active growth. To secure strong short-jointed wood, keep up a vigorous root-action, and let the plants occupy a place as near to the glass as possible. *Ixoras*, *Clerodendrons*, and *Allamandas* that have become well rooted, will be greatly benefited by a careful supply of clear manure water, but see that it is given in a tepid state, and not over-strong.

PITS AND FRAMES.

Keep a nice growing heat to the cutting frames, and if the linings are becoming cold, turn them to the bottom and add some well-fermented dung.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

WATCHED for an opportunity and sowed a piece of Onions and Parsnips, the rest of the ground not being sufficiently mellow for fuller or more general sowing. The *Onion-ground* was turned over, and when dryish well trodden, then raked, and shallow drills drawn about 12 inches apart, which were covered with fine rich soil, trodden, and raked, and a little soot and lime thrown all over. When the ground becomes dry will run a roller over it. This compression is good for the Onion at first, just to form the bulb and keep it near the surface of the soil. As soon as the Onions are fairly up the space between the rows will be kept slightly hoed with a Dutch hoe to keep clear of weeds and to keep the ground moist, without much loosening except at the surface. The depth to which the roots of Onions will penetrate in such circumstances is quite amazing.

Celery.—Ere long we shall take up with good roots the most of our beds of Celery, and pack the heads closely together with earth and ashes between them, that we may prepare portions of the ground for more Onions and other crops. Our Red Celery, Cole's Manchester Red and some other sorts, wants taking up, for if this is not done it will soon go away of itself, the tops having suffered severely; whilst those of the Dwarf White Incomparable, that received no more protection than the Red in time of frost, are as green and nice as if there had been no snow and frost to contend with. Sowed Celery in heat. For forward crops it should have been in the soil at least six weeks ago; but, after all, more depends on never stunting the plants after they are pricked off than in mere early sowing.

Manure and Room.—Where the room under glass is to be

found for multitudes of things now, would puzzle the brains of a sage. It almost makes one envy those who have villages of glass houses, and who can procure coal from head quarters at so small a cost, that the value of a few extra shovelfuls need be no matter of consideration. Many of our great gardeners, and the proprietors of sweet little gardens, know but little of the shifts, and the cogitations, and the worries that many clever men experience when they find that there is never any boundary as to the expectations of extent and variety of produce, but a very limited boundary indeed as to means and room. We have known such cases as a man being up the half of the night, and often too, ransacking every possible place for wood, and cutting it up for his furnaces, and then being coolly told that he must be incompetent because he could not keep up the requisite heat in his houses, when there was no fuel to do it with. It was bad enough to be forced to make bricks without straw; but what if there had been no clay either? Some of the proprietors of small gardens may thus imitate those who expect very great results from the very smallest outlay; but in general they are alive to the fact that certain causes will only produce certain effects. Some time ago, a gentleman who had known what hard work was, when settling down in his beautiful villa, or box as he called it, wished us if possible to solve a problem which was giving him a considerable amount of uneasiness—namely, How it came about, that his gardener seemed to work hard, to be always at work, and ever and anon staying late to bring up his leeway; whilst the gardener in the next place, very similar to his own, and with the same amount of glass, some frames, a pit, a greenhouse proper, and a greenhouseinery, seemed to be getting over his work very easily and quietly? It required no magic to find out the cause. Over the wall, the gardener was able to keep everything in its proper place. There was not a bit of cramming. The beds in the flower garden were few and thinly planted, with plants all standing primly potted in the houses, so as to fill the beds at some 18 inches asunder. A lady with a fair amount of crinoline could have passed through the houses without inconvenience. In our inquirer's garden, the greenhouse proper was clear as to its paths, but crowded everywhere else. There were four times more flower-beds to fill, and the gentleman liked to see his beds full of good plants some 8 inches apart. The vinery was crammed in consequence, floor, path, stage, suspended shelves—wherever a ray of light could be obtained. Early vegetables—as Peas, Cauliflower, Radishes, Beans, &c., were also brought forward in this house, so that generally, even as respects these common matters, he could have them at his table some weeks before his neighbour. In a dark place below the stage where no plants could do any good, was a Mushroom-bed that had furnished some nice pickings all the winter, protected from the drip from the pots by a piece of old waterproof-cloth. In watering, in moving, in coaxing such a number of things to be healthy in such little room, the gardener had actually more labour to perform than if he had had another house or two in winter and spring; and the same increase of labour was continued in hardening-off, planting, and tending such numbers of plants in beds, that were so good that the proprietor owned that few elsewhere, or anywhere, could beat them. He saw at once, that the little room for producing such abundant, diversified results, of itself did greatly increase the labour, and as he had no desire to go backward and be satisfied with less, he settled the matter with his conscience by considerably increasing the uncomplaining, hard-working, gardener's wages, and giving extra help when most needed.

Peas and Potatoes.—We are so far glad to get out of the glass-covered places to say that we planted a piece more of Potatoes where we can give them protection, and on a piece of the best-aired ground we have we sowed Peas and planted Potatoes. The backwardness of the season made us take this ground which we intended for another purpose; but if we do not obtain a first-rate crop of both Peas and Potatoes we shall be greatly disappointed. Last autumn it produced a heavy crop of Parsnips, Carrots, &c. The rich soil had previously been trenched down deep, and the poor and fresher soil brought up with a little of the subsoil, and this winter it was retrenched and ridged again, which brought some of the richer soil from the bottom to the top, and after being turned once or twice during frost in winter

the ground was in very good condition for anything. The Peas were sown in rows 10 feet apart, and three rows of Potatoes were planted between each two rows of Peas, the Potatoes being 3 feet from the Peas, and then the Potato rows 2 feet from each other. Some rows of early Peas were sown to prove so far what is said of them. As yet, for earliness and cropping combined, Sangster's No. 1 is our favourite. When well treated its produce is wonderful. At the outside we have sown the Tall Marrow, Jeyes' Conqueror or Ne Plus Ultra, the shorter, more compact, Veitch's Perfection, and the much smaller sort, but a good bearer and very rich flavoured, Harrison's Perfection. Of Potatoes the sorts were Early Frame, Ash-leaved, Early May, Early Shaw, &c. The Potatoes were in fine order for going out; but they would have been better had we had the convenience of wide shelves or shallow bins for storing them on until wanted for planting. A friend was boasting lately of what a fine sort of early Potato he had. He would astonish some of us old stagers, that he would. He had harvested them in a little barrel, and placed them in a snug warm place all the winter. On going to the barrel the other day he could not take a Potato out; they had grown into one impenetrable lump, so that to make anything of them he was obliged to knock the little barrel to pieces, and then the aspect of the strong long shoots was pitiable to behold. Kept cool and thin the Potato would have had plump shoots about an inch or less in length, and would have been a storehouse of vigour to support the shoot out of doors when the soil was warm enough to encourage it to lengthen.

Other vegetables much the same as in previous weeks. We found some stools of *Sea-kale*, very strong last season, on which the crown seemed to have rotted. In most cases shoots were breaking from beneath, but we do not like them so well as the strong prominent buds. We attribute this to want of protection during the very changeable weather of the winter—frost, snow, thaw, sleet, rain, succeeding each other in rapid succession; not but that *Sea-kale* is hardy enough in general, but the larger the tops above ground the more liable are they to the giving way of the crowns. A nice mound of ashes over the crowns, or even a little mound of dry earth in the autumn, would have saved this trifling miscarriage. We will shortly sow seeds under protection and transplant, as this will save them from the fly, which is apt to seize them when sown out of doors. Such seedlings well treated will do to force next season, and will be strong in the second season. Bits of the roots will also grow freely, but we prefer crowns with six or eight-inch stems to them or young seedlings.

FRUIT GARDEN.

Merely a repetition of previous weeks, with the exception of the birds that have attacked within eight days the buds of every fruit tree comestable. Dusting, painting, dredging, &c., with nasty stuff and even netting seemed unavailing. As soon as the fruit-buds of Gooseberries, Currants, Pears, &c., swell and expand, out the heart goes, and often so quickly is a row done that you cannot see the depredators. Our kitchen and fruit garden is bounded by stables, bushes of the pleasure ground, and farmyard, all right enough but for these terrible marauders, and even they are often useful except at the bud and fruit time. It is certainly disheartening when, after pruning, nipping, and fore-shortening in summer, you have nice little trees bristling with fruit-buds, and you find suddenly four-fifths of the best buds rendered useless and only a few small ones left. One evening, without getting leave exactly, a few of the garden lads batfolded some hundred dozen of sparrows and other birds from a few shrubs in the pleasure ground. Without desiring them any harm we do wish that those who advocate the use of these birds at all times and all seasons had a portion of our supply. In many places, where from covers all round, and where schoolboys must not peer into a hedge after a nest, fruit gardens out of doors will soon be unproductive if not securely netted all over before the buds of the fruit trees begin to swell.

ORNAMENTAL DEPARTMENT.

Out of doors we have done but little, as we had to collect a good quantity of tree leaves, which would have been done at once after the last pheasant-shooting, but for the snow and rains which rendered such work unsuitable; leaves col-

lected wet being both difficult to carry any distance, and to preserve even for a short time for heating purposes, as they cannot be kept from decomposing, whilst dry leaves can always be made to ferment by the addition of a little water.

Shrubby and herbaceous *Calceolarias* designed to flower early in pots, should now have their last shift using rich, rather light, sandy soil, but pressed firmly together, and as soon as the roots run into the new material, strength of bloom may be given by manure waterings. *Pelargoniums* intended for early flowering should now be tied-out, and if the leaves are too close thin them a little so that the light shall play nicely upon them, and for this purpose set the chief plants sufficiently thin. Much may be done in this way even in a house which is crammed, by setting smaller plants between the larger ones; or by elevating the latter on inverted flower-pots. Manure water as a rule should not be given until the flower-trusses are formed, after that the strength added will tell more upon them than on the foliage. *Cinerarias*, *Primulas*, *Camellias*, and even forced flowers coming into bloom will be the better of manure water but not given strong. Lily of the Valley, and all bulbs relish it as soon as the flower-spike appears. *Azaleas* to bloom late should be removed to a north aspect and kept cool; and, as said the other week, *Liliums*, *Tritonias*, *Ixias*, *Sparaxis*, &c., should be watered and shifted as they require it, as soon as growth commences. We would, however, refer to other weeks as to many plants; and here only state, that if dull weather continue Neapolitan and other Violets in beds may be better of a slight dredging of sulphur and pounded charcoal, a little dry sandy soil being worked in among the plants to dry and improve the atmosphere of the enclosed pit or frame. Leaving such matters we will, to please several inquirers, advert to two modes of practice which have engaged our attention and time considerably during the week, and which relate to

Planting Geraniums in Turves instead of pots. First. "Our *Geraniums*, &c., stuck thickly in pots and boxes in the autumn, now want more room, and we have neither room enough, nor pots enough, to pot them singly. We fear to plant them out in an intermediate-bed as you do, and lift again after the middle of May for the flower-bed. How would it do to give the plants a little soil and wrap them in little bundles of moss, rough cocoa-nut fibre, &c.?" Tolerably well, but after considerable experience with all such modes, we think the timid cannot use anything better as a substitute for pots, than pieces of fibry turf. Thus, suppose, from the side of a road or an old pasture, you can take some turf 2½ inches thick, and in breadths of 1 foot. We place that turf where it will be gently dried a little and warmed, and we prepare, a little warmed, light, sandy soil, consisting of loam, sand, and very sweet old leaf mould. Then for stoutish plants of rooted cuttings, with a sharp knife we cut our turves longitudinally and transversely into pieces of 4 inches square, for less plants 3 inches square, and so on; and a clever handy lad will scoop out a round centre piece from each of these square turves nearly as quickly as he would crock a pot; just leaving a bit all round the side and not going quite through to the grass of the turf. A little of the nice mellow, heated soil is placed in the hole, the roots put in over it, a little more soil put over the roots and firmed as in a pot, then carried in sieves to their position, and watered with water from which the chill has been taken off. Now, as to the position. For quick work—that is, making small plants large ones, and to have the turf-pots bristling with roots all over, the best plan is to set these turf-pots on a little leaf mould over a hotbed, however slight, as that will increase the rapidity of the rooting and the growing; but in that case the turves must be lifted as soon as the roots come through them, and transferred to light soil in a cold pit, &c. If left long the roots would run through the bed, and the plants could not be safely turned. If taken in time to the earth-pit and the trench, the roots will progress more slowly, and when planting time comes, they will hang like a wig round their centres of turf. When planted turf and all together, they will run away into the well-aired soil, and thrive better than if they had come out of a pot with the ball unbroken. This is a good plan for all plants with straggling roots that will not lift well out of an earth-bed, as *Mangelsii Geraniums*, *Heliotropes*, &c.

The next best position and the best for strong plants that need no forwarding, and where less trouble is an advantage, is a cold frame or pit to which glass or other protection can be given. In this case a hard bottom must be secured, and a couple of inches of rough leaf mould or other mould placed over it; on that pack the turves with their sides all but touching each other, water, strew a little rough soil all over between the plants, and besides protection and air when the sun is very hot, and now and then a dash from the syringe, such plants will need little or no watering or other care until they are taken with roots all through the turves and in the light earth round them, and transferred at once to the beds.

We meant to have followed with a few words on cuttings and potting, &c., but we must close for the present, merely stating that in a mild sweet hotbed cuttings of Geraniums, Calceolarias, Verbenas, &c., will strike in as many days as they will require weeks generally in autumn.—R. F.

COVENT GARDEN MARKET.—MARCH 18.

The supply of out-door vegetables is still very short; Sea-kale, Rhubarb, Kidney Beans, and other forced vegetables are quite sufficient for the demand. Peas are still scarce, and command a high price, but old Grapes are tolerably plentiful and still very good; new Black Hamburgs are also to be had at from 21s. to 30s. per pound, but the retarded Grapes being so good, are not in much demand; Apples are still abundant, but good dessert Peas are now chiefly confined to Bourré Rance, Easter Beurré, and Bergamotte d'Espéren. Consignments of Salada, &c., from the continent are well kept up, and include Asparagus, and Peas selling at about a guinea a quart. New Potatoes are to be had at 3s. 6d. per pound. There is a heavy supply of Cucumbers, but the demand for them being very good prices are fully maintained. Of Potatoes the stock is very heavy.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	2	0	4	0	Mulberries punnet	0	0	0	0
Apricots doz.	0	0	0	0	Nectarines doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges 100	5	0	10	0
Chestnuts bush.	14	0	20	0	Peaches doz.	0	0	0	0
Currants, Red... ½ sieve	0	0	0	0	Pears (kitchen)... bush.	5	0	10	0
Black do.	0	0	0	0	dessert doz.	3	0	10	0
Figs doz.	0	0	0	0	Pine Apples lb.	10	0	14	0
Filberts 100 lbs.	40	0	0	0	Plums ½ sieve	0	0	0	0
Cobs do.	50	0	60	0	Pomegranates each	0	0	0	0
Gooseberries ... ½ sieve	0	0	0	0	Quinces ½ sieve	0	0	0	0
Grapes, Hamburgs lb	7	0	12	0	Raspberries lb.	0	0	0	0
Lemons 100	5	0	10	0	Strawberries os.	2	0	4	0
Melons each	0	0	0	0	Walnuts bush.	14	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes each	0	4	0	6	Leeks bunch	0	3	0	6
Asparagus bundle	0	0	14	0	Lettuce doz.	0	0	0	0
Beans Broad... ½ sieve	0	0	0	0	Mushrooms pottle	1	6	2	6
Kidney 100	2	6	4	0	Must. & Cress, punnet	0	2	0	0
Beet, Red doz.	1	0	3	0	Onions bushel	5	0	7	0
Broccoli bundle	2	0	3	0	Parsley quart	0	6	0	8
Brussels Sprouts ½ sieve	3	0	4	0	Parsnip doz.	0	9	1	0
Cabbage doz.	0	0	0	0	Peas quart	0	0	0	0
Capitons 100	0	0	0	0	Potatoes bushel	2	6	4	0
Carrots bunch	0	7	0	10	Radishes doz. bunches	1	0	2	6
Onionflower doz.	2	0	6	0	Rhubarb bundle	0	10	1	3
Onion bundle	2	0	3	0	Savoy doz.	3	0	0	0
Cucumbers each	1	0	5	0	Sea-kale basket	1	6	3	0
Endive score	2	6	3	0	Spinach sieve	4	0	6	0
Fennel bunch	0	3	0	0	Tomatoes ½ sieve	0	0	0	0
Garlic and Shallots, lb.	0	3	0	0	Turnips bunch	0	5	0	8
Herbs bunch	0	3	0	0	Vegetable Marrows doz.	0	0	0	0
Horseradish ... bundle	2	6	4	0					

TRADE CATALOGUES RECEIVED.

Francis & Arthur Dickson & Sons, 106, Eastgate Street, and Upton Nurseries, Chester.—*New and Select Agricultural Seeds.*

G. White, 3, Moss Street, Paisley.—*Catalogue of Florists' Flowers, Greenhouse, Herbaceous, and Bedding-out Plants, &c.*

John Morse, The Nurseries, Dursley, Gloucestershire.—*Catalogue of Cuttings of Dahlias, Fuchsias, Chrysanthemums, Verbenas, Pelargoniums, &c.*

Ambroise Verschaffelt, 50, Rue du Chaume, Ghent, Belgium.—*Pris Courant pour le Printemps et Été, 1865. Plantes Nouvelles.*

J. Bruce & Co., Hamilton, Canada West.—*Descriptive Catalogue of Seeds for the Farm, Kitchen Garden, and Flower Garden, roots, &c.*

TO CORRESPONDENTS.

BLACK AND-LEAVED KIDNEY POTATO (*A Subscriber*).—If by "chit" you mean eye this "chit" certainly has not "black" on it, nor do we know any at the time of the year.

SOWING CELOSIA SPICATA, PENTSTEMON, AND SALVIA AZUREA (*Obcordata*).—Sow them all in pans in a compost of turfy loam two-thirds, and well-rotted leaf mould one-third, with a free admixture of sand, just covering the seeds with fine soil, and after watering place in a frame on a gentle hotbed. Keep the pans in the frame until the plants are up and have shown their rough leaves, then prick off into small pots, especially the first and last, pricking the Pentstemons into a pan—an inch or so apart will do. Continue the whole in the frame until the Pentstemons and Salvia azurea have made good growth, removing them, however, before they become drawn to a cooler situation, where they can be hardened off for finally planting out in the last week in May or first of June. If strong the Pentstemons may flower in autumn, they being hardy perennials, and the Salvia azurea will probably flower also, it being a half-hardy perennial. It should be taken up in autumn after the first frost, the roots potted, and kept rather dry during the winter in a greenhouse from which frost is excluded. The Celosia spicata seedlings should be repotted as soon as the roots reach the sides of the pots, and continued in the frame until May, when they should be removed to a warm greenhouse, or a vinery at work, placing them on a shelf near the glass. When the flower-head is just visible in the heart of the leaves pot them in their blooming-pots, which may be from 6 inches in diameter for the small plants, up to 9 inches for the large plants. Employ the compost already named, with the addition of well-rotted cow or stable manure one-fourth of the whole. Provide sufficient drainage and keep well supplied with water, occasionally sprinkling the plants overhead with tepid water through a syringe. Continue near the glass in a warm greenhouse or vinery, and when the pots are filled with roots every alternate watering may be of weak liquid manure, which will increase the size of the spikes of bloom. It is a highly ornamental plant for the autumn decoration of the greenhouse or sitting-room, and very useful for bouquets.

SMALL VINERY, VENTILATING AND PLANTING (*Idem*).—We do not notice anything in your arrangements to hinder your planting the Vines in front within the house, providing them with a border inside. We think that with the sharp incline of the roof the Vines would not do well trained down the eaves from the back. It is not necessary to have front lights, there being no objection to there being none, nor to the sharp fall of the roof. The ventilation provided is ample. Six Vines, with two rods from each, planted 4 feet apart, the rods trained 2 feet apart, would be sufficient.

COTTAGE GARDENERS' DICTIONARY, &c. (*B. H.*).—You had better inquire of Mr. Bohn, the publisher, whether a supplement is intended; we have no interest in the work. We do not know the date of the last edition of Don's Catalogue, nor its price. Your Conifer is often called Cupressus filiformis, but it is now usually described by botanists under the name of Biota pendula. Lambert named it Thuja pendula, and Thunberg Cupressus pendula.

FLOWER-GARDEN PLANTING (*S. G. W.*).—As you ask our advice, we would be inclined to plant the wheel on both sides of the second terrace with the same colours. The Petunias will not harmonize with your other things in height, unless you have such a dwarf variety as the old small-flowered splendens. Each of these wheels consists of a circle for centre, and eight oblong beds round it. These beds may be made more artistic and of many shapes; but your straight solid clumps as so many spokes will just look as well when planted as the most artistic scroll. The planting of the centre circle is with Heliotrope pegged down, and edged with Flower of the Day Geranium, the pegging being done not to intercept the view of the baskets raised on the third terrace. Now we have no fault to find with this; many adopt the plan; but we do not think that Heliotrope and Geraniums make a good combination. We would then fill that bed with Heliotrope, and a broad edging of dwarf Ageratum, as you seem to have them; or if tall kinds, they could go in the centre, and be pegged down. In either case you would need no more blue. Better than that, we would prefer making the circle entirely of Flower of the Day, and the opposite circle of Alma or Lady Plymouth. This would give white either with or without the flowers of the Geranium. Then you propose to plant four of the spokes of your wheel—that is, each alternate bed with Cerastium. Two with Scarlet Verbenas, and two with Gazanias, would, we think, be making too much of a good thing of the Cerastium. Now though we like the Cerastium, we do not think it is quite right to have such large beds of it. With the centre bed white, a very simple arrangement would be to have these eight beds alternately filled with scarlet and yellow. They would also look very nice to be planted with scarlet, blue, yellow, and purple, the match or pair beds crossing each other. A very pretty arrangement would be to make the centre white-leaved Geraniums, as Alma, with the flowers removed, bordered with Lobelia speciosa, and then have four scarlet beds of dwarf Geraniums or Verbenas, edged with Cerastium, and four beds of a dwarf yellow Calceolaria, edged with purple Verbenas. This last would make each bed complete in itself, and you would have a beautiful contrast and shading of colour. You may use different tints for the two sides, but the more the two groups of nine clumps resemble each other the more pleasing they will be. We cannot quite make out about the raised bed or basket on the right-hand side, but we would decidedly use scarlet Geraniums instead of Cuphea for the centre. For the two four-tiered baskets we would do as you propose, but for the high central basket we would prefer a drooping Fuchsia, as *Reck's Glory*, to the Delphinium, or even such climbers on a rough trellis or the top of a tree as *Maurandia* or *Lophospermum*. The edging might be *Verbena pulchella*. Your other arrangements on the third terrace will do very well.

STOVE AQUATICS FOR TANK (*A Lady*).—These plants are grown by very few, the difficulty not consisting in the price, but where to meet with them. *Nelumbium speciosum*, *N. jamaicense*, *N. tamara*, *N. compactum*, and *N. latum*; *Nymphaea corallina*, *N. stellata*, *N. versicolor*, and *N. blanda*; *Heteranthera reniformis*, *Eurya's ferox*, and *Villarsia indica*—these have floating leaves. *Pontederia azurea*, *Ailmsa cordifolia*, *Jussiaea nassau*, *J. suffruticosa*, *J. repens*, *Peperomia stricta*, *Sagittaria angustifolia*, *Danthonium indicum*, and *Papyrus odoratus*.

ACACIA ARMATA LEAVES YELLOW (*Rather Puzzled*).—The shoots enclosed in your letter are quite yellow, which might be occasioned by a variety of causes; but, in the absence of any data whatever, we cannot undertake to give an opinion. The roots are probably defective. There is, however, a trace of thrips having been on the foliage, and they may have been the cause of the mischief. Fumigating with shag tobacco two nights consecutively, taking care to have the foliage dry, would exterminate them.

MISTLETOE SEED.—Mr. W. Gath, Bradford, Yorkshire, will be much obliged by any one sending him a few seeds of the Mistletoe.

ANNOUNCEMENT.—Messrs. J. & S. W. L. Euston Road, N.W.

CHARCOAL AS A MANURE (O. S.).—We cannot answer you better than by giving the following:—Charcoal is a most efficient manure to all cultivated plants, especially to those under glass. Heath, Rhododendrons, Cucumbers, Onions, Beans, cruciferous plants, Hydrangeas, Camellias, Melons, and Fine Apples, have been the subjects of extensive and most successful experiments. We think no cultivated plant would be unbenefited by having charcoal applied to the soil in which it is rooted. It should be broken into small pieces about the size of a nut, and, for potted plants, may be mixed in the proportions of one part charcoal to twenty parts earth. If applied to the open ground, one-fourth of a bushel may be sown over a square rod or perch, and dug-in just before inserting the crop. The reason of charcoal being so useful as a manure is very apparent. MM. Bennetier, Sausure, and others, have demonstrated that plants are rendered much more luxuriant and productive by having carbonic acid applied to their roots, than other plants to whose roots no such application was made. Now charcoal kept moist, as when buried in the soil, slowly combines with oxygen, and emits carbonic acid—in fact it slowly dissolves. For drainage in flower-pots none better can be employed than 2 inches in depth of pieces of charcoal about the size of a filbert.

CUTTING EXHIBITION FRUIT (Idem).—The judges always cut Melons, as well as Apples and Pears, if needful to ascertain their ripeness and quality.

STRAWBERRY FORCING (A Poor Amateur).—1. The shelves shown at page 185 (Fig. 2), and styled Strawberry shelves in vinery, were intended to show the kind of house suitable for fixing the shelves, it not being intended to occupy the house with Vines and Strawberries at the same time—it is, indeed, impracticable; but if you do not start the Vines until April, you might have the Vines so contrived as to take out, and use it as a Strawberry-house from December to April, the shelves being put up in December, and taken down in April, after the crop has been gathered, and the Vines introduced, retaining a shelf, however, at back and front for more Strawberries. 2. The stage at back, beneath the shelves, is of no use for Strawberries, though useful to get at the shelves, and for plants after the shelves are taken down. 3. The earliest of all Strawberries is May Queen, it being ten days or a fortnight earlier than Black Prince under the same conditions; but it is a small fruit, though a great bearer. Black Prince, undoubtedly, would be the better for market. Perhaps the earliest and best for market is Krens' Seedling, which comes in about ten days after Black Prince, the fruit being large, and the plant a good forcer. The old Wellington is a very prolific and certain forcer, though the fruit is only small.

TURF FOR VINE-BORDER (Idem).—We laid up a heap of turf for a Vine-border in June, 1858, and turned it over twice, adding a bushel of soot and fresh lime to each cartload, and formed the border in autumn of three cartloads of chopped turf, one of brick and old mortar rubbish, and six bushels of bolled half-inch bones, thoroughly mixing the whole together. Unexpectedly we had two more borders to make ready by March, and we cut the sods 2 inches thick, and used them fresh, merely chopping them as they were brought, adding the old brick and mortar rubbish, and the same quantity of charcoal and half-inch bones. All the Vines were planted on one day, and there was no difference whatever in their growth. We have since used the turf a year old, but we find the older it is the worse for a Vine-border, which cannot be made too open, considering the length of time it has to remain undisturbed. Fresh sods, cut at a dry time, and roughly chopped, we like best, planting the Vines in a little fine rich compost, and making the border 9 inches or a foot higher than the required depth, to allow for settling.

ALL SORTS OF PLANTS IN ONE HOUSE (B. W.).—From the first part of your letter we thought you were going to give us an example of keeping everything in its proper place, and allowing nothing else to interfere with it in the way of the cramming that many of us have to resort to; but as we read on we found that, if you do keep flowers to themselves, you are not to be behind any one as respects cramming for fruit, when you speak of Strawberries, Vines, Peaches, fruit in pots, and Melons &c., in the same house. Now, all you propose doing may be done, and is done often; but compromises have to be made, and one crop must suffer frequently from attending to the wants of others. The great point is to get your Peaches in bloom, and set, before the Vines are scarcely broken, and then the increase of temperature that will suit the Vines when in bloom, will just suit the swelling Peaches. As the Peaches approach maturity, the greater quantity of air required for flavour will be too much for the Grapes, so that, though the Grapes will be very good and sweet, they will not likely be so large as if grown in a house by themselves. Our first advice, then, would be to keep one house for Vines and another for Peaches. You might plant Vines against the back wall; but neither they nor Peaches will do much good there, unless your stems of Vines, up the rafters, are at least 5 feet apart—that is if the Vines reach the top of the rafters. Then you might grow any sort of fruit, as Peaches, Figs, &c., in pots on the floor of the house, and move them so as to get what light and air and temperature would suit them best. By this plan you may grow any sort of Vines, giving Muscats the warmest end. Our second advice would be, if you will have Peaches in your early vinery, to confine them to the back wall, as there the greatest amount of air can reach them from the top ventilators; and to grow only the earliest and hardest Grapes, as the Black Hamburgh, Buckland Sweetwater, and Royal Muscadine, and, for Muscat flavour, the White Frontignan. Bear in mind that the Peaches will thrive only as you keep the roof of the house thin of Vines. Our third advice would be, if there must be mixture, to confine the Peaches chiefly to the late house, and have some early ones in pots, which could be moved from the vinery. In this case we would have a trellis in front, and trees against the back wall, and keep the Vines thin up the rafter—say from 4 to 6 feet apart. For this late house the same hardy Vines may be used, or, if you contemplate keeping them late, a plant or two of Lady Downes' may be planted at the warmest end. Before the trellis, and the rafters are filled, you may grow any of the fruits alluded to on the floor of the house, and Melons will do well in pots over the hot-water pipes. It will be as well if the pots do not touch the pipes. Your description of the position is unfavourable. Everything else can be done under glass except giving the command of light; and if you cannot have the health-giving rays of the sun the south aspect will be of little avail. The arrangement of the house seems to be very good.

DRAINING ON LAWN (A Subscriber).—There is no other mode of extirpating them than by having them grubbed out by the aid of a knife, and putting a little quicklime into the hole thus made. A little light soil should then be sifted over the surface, a sprinkling of Seckling seed sown, and then the roller passed over it.

VEGETABLE SEEDS FOR BARRADORE (C. J. Nottingham).—In the mountain districts any of our English kitchen vegetables might be cultivated if the cultivator had a moderate amount of judgment. On the low grounds Broccoli, Cauliflower, Kidney Beans, and Cucumbers, would be likely to endure the climate; but why not try all our usual kitchen vegetables? If they fail the loss will not be heavy.

EXPORTING STRAWBERRY PLANTS—VINES FOR SUCCESSION (R. D.).—Tie the plants in bundles as you propose, plunge the root ends in coco-nut fibre refuse, put moss over its surface, and lace it down firmly with string. We should put the whole in a box and use wire net instead of a lid, and have the box in a cabin or on deck. Use zinc labels, and write on them with the appropriate ink. There is no Grape more marketable, or less liable to failure, than the Black Hamburgh, and it will keep up the succession you mention.

SILVER TREE (H. H. H.).—This native of the Cape of Good Hope is found there only on the eastern slope of Table Mountain. The Dutch colonists call it *Witteboom*, and botanists name it *Leucodendron argenteum*. It requires a greenhouse or conservatory for its shelter. Sift two parts beach mould and one part sandy loam, chopped together, but not broken fine; drain the pot well, and mix some pieces of charcoal with the soil. Keep it cool and the air dry; never syringe it nor put it out of doors in summer. Let the soil be moderately moist, but excess of water and dryness are equally fatal to the roots.

LILIUM AURATUM (An Old Subscriber).—Any moderately rich lightish loam suits it. It is hardy, and the bulbs left in the border during winter require no other protection than 2 or 3 inches depth of leaves or coco-nut fibre refuse to be placed over them.

HYGROMETER (Lex).—Catgut is sensitive enough in showing the dryness and moistness of the air, but this is useless unless affixed to a graduated scale, whereby a comparison and estimate of the amount of moisture may be ascertained. The seed was lost; but the "Desert Pea" of Australia we believe to be *Cilanthus pulegius*, and the cultivation is given in all gardening books.

CARNATIONS (G. E.).—You can have "Florists' Flowers for the Many" free by post if you send five postage stamps to our office, with your direction. We give this answer because you will find in that book far fuller information than we can here find space for.

PEARS FOR A S.W. ASPECT (A Subscriber).—All the Pears you have planted will do on the aspect of your wall except Glou Moreau, and we would recommend in its stead either Thompson's or Red Doyenne. Marie Louise we should prefer to Ne Plus Meurir, and Fondante d'Automne or Urbaniste to Jersey Gratiol. However, you have not seriously erred. The S.W. aspect is just the place for Winter Nells, and we anticipate you will have some very fine fruit from it. In speaking of walls use the term "aspect," and then no mistake can arise.

TRICHOMANES SPECIOSUM FRONDS BROWNED (A Constant Reader).—Judging from the appearance of the fronds sent, we think the case in which the plant is grown is not kept sufficiently moist. The atmosphere should be kept constantly humid. The compost should never be allowed to become dry; and if water were constantly dripping on it, free drainage being afforded, the plant would have a greater length of frond. Your keeping the atmosphere so dry accounts for the occasional appearance of the small black insects, which assuredly are thrips. These will be best got rid of by keeping the case more moist, sprinkling it with soft water, which has been exposed to the air, once or twice daily, or as often as may be required, in order to maintain a uniformly humid atmosphere. A slight fumigation with shag tobacco will assist in destroying this pest; but the fronds should have no water standing on them: and care must be taken that the smoke is not too strong, and that it is cool when it reaches the fronds. This Fern requires a very humid atmosphere, a fair amount of light, a little of the morning or evening sun, and fresh air, the fronds dying off in a close atmosphere. It should, therefore, have air by opening the case a little, not much, otherwise the dry air of the room will dry the atmosphere of the case too much, and be equally pernicious, and the condensed water on the glass should be wiped off in the morning; this will tend to keep the atmosphere of the case pure, and lessen the necessity for air-giving.

PIRUS MARITIMA AND P. AUSTRIACA ON THE COAST (Blackpool).—These Pinuses do very fairly on land by the sea, and withstand the sea breeze better than any trees we know of. Yours is a very bad situation; but we would advise your giving the above-named a trial, planting more extensively if they succeed. They do so in many places, and are extensively planted on the east and west coasts.

INK FOR ZINC LABELS (A.B.).—Try that which we gave a recipe for at page 168 of our Number published Feb. 21.

LOMBICHA AURO-RETICULATA (A Regular Subscriber, Peckham).—Your plant is all right. The young leaves are always like those you enclosed, somewhat oak-leaf shaped and green. The plant strikes readily from cuttings.

ESPALEIR APPLE AND PEAR TREES (A.W.).—If the shoots be rampant and grow they may be cut back to half their length, but if of medium growth they need not be cut in so much. Some regard to the shape of the tree ought to regulate the pruning, and in espaliers, trained horizontally, it is better always to allow the bottom branches to be the longest. There is no difficulty in getting the upper ones to elongate, which they sometimes do to the detriment of the lower ones. Being planted only last year, it is not likely they will want severe cutting-in this season; but another season they may possibly want checking a little at root and top; but when they once get into a bearing condition goodness of growth is more rare.

BREDDING GERANIUMS SUITABLE FOR PLANTING TOGETHER (N. O.).—We are sorry we are not acquainted with all the varieties you mention, but we hope they will flower with you before planting-out time, and enable you to judge of their colour. Of the kinds we are acquainted with in your list, Spitzfire, Stella, Glowworm, Sir W. Wallace, and Admiration might go pretty well together as scarlets; the last-named one, being the strongest grower, might be in the middle of the bed. Babes-in-a-dull rose, but good bloomer. Rose Morn is somewhat brighter. Carmine Nosegay is a crimson, and is a great favourite in many places. Bishop of Exeter and Osian are strangers to us. If you want to increase your stock, cuttings may be put in for some time yet, and these may still be tidy plants to turn out in May if they be kept warm, but there is no doubt but they would be better and larger if not cut. Usually the requirements of the case determine whether propagation should go on or not.

CREEPERS IN STOVE OVER FERNS AND ORCHIDS (*Orchidophilus*).—We think you have put in more wires than are needed, but you are not compelled to use them all. Creepers with strong large foliage, like *Ipomoea Horsfallii* and *Pasiflora edulis* or *P. quadrangularis*, occupy more space than most of the *Jasminums* or *Hoyas*, but they can be trained to any reasonable condition. There is no question but Orchids and Ferns will thrive very well under such shade; the great point being to prevent the creepers darkening the house too much late in the summer when the Orchids want a little more sun. This you must remedy by thinning. *Bougainvillea* does best in a pot, the plant being exposed to the full sun. Let us know how Mr. Bewley's mode of glazing answers with you.

GRAPE VINE BUNCHES BECOMING ABORTIVE OR TENDRIL-LIKE (*Subscriber of Some Years*).—This is not an unusual occurrence, and is attributed to two causes—the imperfect ripening of the fruit-bud the preceding autumn, and the absence of sunshine to assist nature in her up-hill work of making the most of such bunches as are not entirely blind. We have little hope of any treatment now preventing the evil; but we may say that allowing the fruit to hang long after being ripe tends to weaken the vine, as also does pruning too soon or too late, or a too-heavy crop, or perhaps the border lacked moisture, or had too much of it. All these and some other excesses tend to check the due development of the plant, and a failure is the result. Your present management seems all that can be done, and brighter weather will, we hope, assist in saving what is now left.

ARRANGEMENT OF PLANTS AND FILLING STONE VASES (*A Constant Subscriber*).—Arranging plants for effect on a greenhouse stage is a matter difficult to understand, unless the operation was performed in the presence of the person wanting such information. Of late years plants with remarkable foliage have entered largely into plant arrangement, and fresh ones are added every year, and as we do not know your particular wants we may say, that in the staging of plants, allowing one now and then to rise above its fellows is a good plan, providing always that such as show

themselves above the level are well grown and handsome. The filling of large stone vases may vary each time the plants are changed, which, we presume, is pretty often for in-door purposes; as the plants may simply be plunged, pots and all, and covered with moss, in our case we often have creepers prepared for the purpose of hanging over the edges, and tall and medium-sized plants for the centre. A trailing *Tradescantia* is one of our greatest favourites for a marble vase, but *Isolepis gracilis* and several Ferns are used occasionally. Possibly one of our contributors may give us a list of plants available.

GARDENING NEAR THE SEASHORE (*Marine*).—If your situation be a favoured one, and not likely to be reached by the spray from a cold boisterous quarter, you may plant several kinds of shrubs, with a fair prospect of success. *Laurustinus* thrive well in such places—better than common Laurel; then there is the *Tamarix*. Pinus *Mugho*, double *Gorse*, and even *Sycamore* will endure a strong sea air. In fruits the *Peach* thrives well, as likewise do *Strawberries*; and amongst vegetables *Potatoes*, and the whole of the Cabbage and Broccoli tribe do well, as is shown in the large quantities sent to the London market from Cornwall, where they are grown mostly within a mile of the shore, and often within a stone's throw of it.

NAMES OF FRUITS (*Rev. H. W.*).—The two small red Apples are *Scarlet Nonpareil*, and the large paler one is *Dumelow's Seedling*.

NAMES OF PLANTS (*R. F. M.*).—We do not recognise the acrop you sent. (*Notice*).—*Chondrus crispus*. A common pocket lens will answer your purpose. It may be had of any optician. (*Col. D.*).—Apparently an *Arbutus*, but we cannot be sure without seeing the flower. (*R. P. B.*).—Your Mosses are—1, *Bryum hornum*; 2, *Dicranum scoparium*; 3, *Polytrichum piliferum*; 4, *Hookeria lucens*; 5, *Hypnum muscoides*; 6, *Tortula muralis*; 7, *Bryum nutans*; 8, *Funaria hygrometrica*; 9, *Weissia controversa* (or *W. trichodes*?); 10, *Hypnum proliferum*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending March 18th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun. 12	30.024	30.011	45	27	42	42	N.E.	.00	Overcast; cloudy and cold; overcast; slight frost at night.
Mon. 13	29.953	29.709	48	30	42½	42	N.	.00	Overcast; cloudy; overcast at night.
Tues. 14	29.923	29.814	42	30	42½	42	N.E.	.01	Cloudy and cold; a few snow-flakes; overcast (frost at night)
Wed. 15	30.010	29.984	40	29	42	42	N.E.	.00	Frosty drizzle, like very small hail; cold and cloudy; slight
Thurs. 16	30.025	29.949	41	23	42½	44	N.E.	.00	Overcast throughout; frost at night.
Fri. 17	29.924	29.906	45	24	42	42	E.	.00	Overcast; dry smoky haze; cloudy; frosty.
Sat. 18	29.970	29.927	42	32	42	42	E.	.00	Foggy; overcast; cold and sunless; overcast at night.
Mean	29.975	29.900	43.71	27.86	42.21	42.29	.....	0.01	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY-KEEPING FROM A COMMERCIAL POINT OF VIEW.

It is for Englishmen to determine whether England is capable of profitably supplying eggs and poultry for her own consumption, but I am painfully surprised to notice how very few seem to take an interest in the subject, which you have been pleased to bring before your numerous readers with laudable zeal and perseverance. When I had the honour of addressing you in No. 204 I was in total ignorance of the highly interesting discussion raised by Mr. Geyelin, whose ability and industry entitle him to public sympathy and support, at least to the extent of fairly trying if it be commercially possible for England to feed her own people. He goes very fully into figures to show this may be profitably done. Some few, and I regret to say but very few, of your numerous correspondents seem to notice his remarks, though none can doubt their importance. This is not very creditable to the poultry amateurs of England, who are ever ready to discuss most zealously and learnedly about the breeds of fowls, or the proper colours of cock's legs and tails, but who seem to ignore such practical dry business details as the produce of hens and the cost of feeding them.

These are mere questions of detail, and resolve themselves into a matter of £. s. d., but the success of Mr. Geyelin's project depends entirely on the amount and cost of production and the market value of the produce.

It is not for me to interfere between Mr. Geyelin and "C. S. J.," so I leave them to settle as they can, for it is evident both mean well though differing considerably in their views. I must, however, notice two correspondents in No. 206, one "AN OLD SUBSCRIBER," on the wholesale price of eggs, the other "BAERDOOR," on poultry food and annual egg produce. Both are apparently adverse to Mr. Geyelin's figures, but in point of fact neither seems to affect him in any way.

His scheme only refers to London prices, and to the productive powers of hens fed and lodged so as to stimulate the utmost powers of production. It is but fair to Mr. Geyelin and the public to use the utmost candour and sincerity so as to put the case fairly. He fixes the produce of hens fed on his plan at 180, while "BAERDOOR" writes, "Cochins, Brahmas, &c., should lay 120 eggs in a year." True, but how many more may be reasonably expected? Does "BAERDOOR" give this as the actual result of his own experience? If so, will he say how the hens were treated, their ages, &c.? I admit the mere opinion of one man, or even his practical experience, can carry but very little weight; I can, however, quote some well-known authorities which fully sustain Mr. Geyelin's calculations about the produce of hens, while but one goes so low as 120, the figure of "BAERDOOR," for the best known egg-producing breeds. Cobbett says eleven hens should give 2000 eggs and 100 chickens, if well fed, in one year, and allows eighteen bushels of barley to feed them with one cock. Richardson relates that three Polish pullets laid 524, cost 16s. 6d. Baxter records that four hens laid 710 eggs one year at a cost of £1 2s. 1½d., and 594 the next year at 15s. 9½d. In the work called "Farming for Ladies" we read, "Hens lay nearly all the year round, except when moulting and in the depth of winter, but generally speaking at least ten to twelve or fourteen dozen eggs a-year may be counted on." I dare say the experience of most of your readers will differ quite as much as that of those writers, so much depends on the peculiar circumstances of each case. In my opinion a fair average can be taken only by the actual results obtained by a large number of the most careful breeders, who keep their poultry in the best and cheapest way. I am in candour bound to add that in "Chambers' Information for the People" it is broadly laid down that no hens will pay for their food if it is all purchased.

This question is strictly a national one, for it is most important to ascertain by actual experiment if eggs and poultry may be produced by ourselves as cheaply as by various nations immeasurably behind us in everything relating to agriculture. If Mr. Geyelin can succeed in teach-

ing Englishmen that this may be done, then few will deny his claim to be fairly considered a national benefactor. At present his task is not an easy one. As it is really the duty of every well-wisher of his country to aid this noble effort by every practical means, so your experienced readers should each contribute so far as he can to simplify this question by clearing up the doubts and difficulties that surround it. Men are naturally timid and shy of embarking their money in any novel experiment of which they have but very scanty knowledge, and which of us can say that he has any knowledge of thus producing eggs and poultry commercially in England? For the present I shall say nothing about the little animal which is well known to be a decided commercial success in Belgium, where many are largely engaged in breeding, feeding, and exporting to hungry, wealthy England the—OSTEND RABBIT.

MR. DOUGLAS AND THE GAME BANTAMS AT MANCHESTER.

I DID not attend the Manchester Exhibition, but I received a letter from Mr. Fielding, in which he stated that Mr. Douglas had claimed the first prize pen of Game Bantams, and that the birds were offered to me for £10. I authorised Mr. Fielding to purchase the pen, but at the same time observed that a judge acted improperly in claiming birds at a show. The money, less a sum due to me from the Islington Show, was remitted to Mr. Douglas by Mr. Fielding. I highly disapprove of anonymous accusations, and recommend "A TIMID EXHIBITOR" and "HE WHO RESOLDS THE BANTAMS" in justice to all parties concerned to communicate their names to your readers.—ST. GEORGE GORE, Hopton Hall, Wirksworth, Derbyshire.

EXTRA PRIZES FOR PARTRIDGE-COLOURED COCHIN-CHINA FOWLS.

HAVING read the letter of Mr. Tomlinson, in your Journal of the 14th inst., respecting extra prizes for Buff Cochins at the next Birmingham Show, and being as enthusiastic an admirer and breeder of Partridge birds as he is of Buff, I beg to suggest that similar prizes or one or two cups, say for old and young birds, be given to Partridge Cochins; and I have much pleasure in subscribing £2 in furtherance of this object, trusting that other Partridge breeders will do the same, and at once send their subscriptions to Mr. Lythall, Birmingham.—EDWARD TUDMAN, Ash Grove, Whitchurch, Salop.

DISTINCT VARIETIES OF PIGEONS.

It is with pleasure I respond to "WILTSHIRE RECTOR'S" request as to my opinion respecting the distinct varieties of our domestic Pigeons. I write "varieties" because the word "race" seems to me to be too uncertain of meaning, and when explaining our ideas we cannot be too particular as to the words we make use of. I consider that all our domestic Pigeons are descended from the Wild Rock Pigeons, and, consequently, are all of one species; but these Rock Pigeons, even in a wild state, present us with slight variations, which have been designated as sub-species or geographical varieties. These are the Blue Rock with white rump, the Blue Rock with blue rump, the Blue Rock with chequered shoulders, and the chequered Dovehouse Pigeons—variations slight indeed, but such as have been considered by naturalists to constitute only geographical varieties and not distinct species. These varieties of Blue Rocks having been domesticated in different countries and their offspring becoming crossed and mixed has given an impetus to sporting or greater variations, which, under the fostering care of man have been wonderfully increased and developed, sometimes by accident, at others by careful selection. Through many successive ages have the variety of domestic Pigeons arrived at their present state.

All tame Pigeons are therefore supposed to be of one species. But there are very many varieties. Let us take, for instance, the variety with wattled beaks, of which, the

Persian Carrier (closely resembling our Dragoons), is probably the original, or, at least, the oldest known example; it has been bred with longer beaks, as in the Scandaroons, Bagdads or Horsemen, and with shorter beaks, as in the Barbs. The English Carrier is the last or newest sub-variety of the Wattled variety. I believe it to be admitted that the English Carrier is essentially a high fancy bird, and produced from a cross from Persian and Bagdad Carriers with a dash of Powter. The sub-varieties may therefore be regarded as the various branches of one family; they all bear a striking family likeness, and yet differ much in size, form, length of beak, &c. As to colour of the plumage, that may be influenced and altered at will, leaving so little appearance of any admixture in other respects, that a bird can hardly be said to be of another sub-variety, because it is of a different shade or tint. Black seems to be the original colour of this family or variety.

Next as to Fantails. Here we find white as the original plumage of this family or variety; and, as in the preceding, we have several sub-varieties, as the Indian with long necks and point-headed; the German, with shorter necks and turned crowns; the French Silk Fantails, and our graceful English broad-tailed Shakers. Various colours are in the Fantails of much more recent introduction, black and blue not being uncommon. No doubt they were first produced by a cross, but if well up in the requisite points of the variety are so much the more valued by fanciers.

As to the colour of the eyes, the dark hazel is common to all white Pigeons, the difficulty is to breed a white Pigeon with any other. All the wattled Pigeons just alluded to, when they come of white plumage have dark eyes; but dark Pigeons have light eyes. I remember a curious blunder in this respect among the stuffed Pigeons in the Prince of Weid's museum, where the white Fantails were stuffed with pearl eyes, and some other dark breed had received their dark eyes. Coloured Pigeons, or such as have coloured heads, as a rule have light eyes. Sometimes white Tumblers have pearl eyes, but they are difficult to breed; and I have at this time an excellent breed of white Tumblers, many of which tumble from thirty to forty times in a minute, that have just that deep hazel iris and black pupil which "WILTSHIRE RECTOR" alludes to. In parti-coloured birds, as Almonds, Baldheads, and Beards, it is the aim of the fancier to breed the Pigeons with pearl eyes, but they well know the proneness of such birds to breed broken eyes; and in many of the Toys, where the division line of white and colour passes through the eye, such birds often have the eyes half and half, that touching the white plumage being hazel or dark, while that part next the coloured feathers will be gravel. I do not therefore lay much stress on the colour of the eyes; that I believe to be influenced by the plumage in our domestic Pigeons. I have no doubt but that all varieties were originally of a certain colour, and that of that colour they were best; but fancy often changes, and better birds after a time may be had of quite a different colour, so much depends on cultivation.

The purity of varieties is so very different to the distinctness of different species that the two will hardly bear comparison. Many of our choicest breeds of Pigeons and poultry are so crossed either accidentally or intentionally, that absolute purity of variety is a thing more easily talked about than proved. If individuals of some desired form or colour are selected and bred carefully for three, four, or more generations, the offspring will generally come pretty nearly alike; and I suppose this is what some persons allude to when they call this, that, or the other a pure breed or a distinct race—terms more easily said, I think, than explained. Generic or specific distinctions are very different. They are limited by nature, and the mixture of species generally produces barren mules.—B. P. BRENT.

A VERMIN TRAP WANTED.—We beg to direct attention to an advertisement in which the Royal Society for the Prevention of Cruelty to Animals offer a prize for an improved vermin trap, which shall either, without inflicting torture, secure vermin alive or instantaneously destroy them. There can be no doubt that much unnecessary pain is inflicted by many of the contrivances at present in use, when it becomes

necessary to check the too rapid increase of destructive animals; and it is to be hoped that the inducement offered by the Society may be the means of calling forth an invention fulfilling the conditions laid down; we will also take this opportunity of saying that this Society is most praiseworthy in all its proceedings, and every way worthy of support.

BEES IN LANARKSHIRE.

POLLEN-CARRYING commenced here on the 24th February, although I saw young bees (Ligurians), as early as January 26th; and February 9th being rather a mild day most of the hives got well aired, and a great many young bees were seen, so that, what with early breeding and fertility, it augurs well for their future prosperity.

The hint respecting strange bees killing the queens of other hives will still be fresh in the minds of some of your apiarian readers. The stock of which the queen was killed has remained queenless the whole winter, and the bees have been wonderfully preserved, being the most crowded hive in my apiary. I was unwilling to lose it, and therefore obtained two weak hives from a friend who was unable to bring them through the winter. One of these queens, which I gave them on the 10th of February, was well received, and this stock since threatened the destruction of several hives by robbing; and although the Ligurians could protect themselves well enough, still it prevented their going abroad in search of pollen, and not a single hive escaped.

I may here mention that it is not all profit to have hives over-strong, unless all in the apiary are about equal, as the warfare, when once begun, seldom ends till some have fallen victims. I generally deem it best to remove the strong stocks; but in this case I lessened its strength by taking part of the bees and uniting them to one of the queens above referred to, whose bees were all dead. Having presented the queen to them, she was immediately imprisoned, and would not have been allowed to survive had I not interfered. I then caged her and put her in the hive, but the bees deserted her, and, it being too cold to leave her alone, I freed her, and tried her with them again, but still the same spirit reigned. I again captured her, and having kept her in my hand for a short time, again presented her, when in an instant a strange Ligurian darted furiously at her, and nearly stung her. I thrust it off, but only for a second attack, when it seized her by one of the legs. I then killed it; but, so tenacious had been its hold, that, after fifteen minutes, the queen was still dragging the Ligurian about. This clearly demonstrates that strange bees attack the queens of other hives.

All this time I had not been able to effect a union. There was no time to lose, as the bees were fast leaving; nor would they receive her till I applied a drop or two of essence of peppermint, diluted with a little syrup. I first smeared the queen and then the bees, and in an instant the union was as complete as it was interesting. I have now made two hives from one, with plenty of bees for both, and restored peace in my apiary, having them now all in their spring dress, which is a covering of soft dry grass round each hive, to promote breeding; woollen cloths I detest as harbouring moths.—A LANARKSHIRE BEE-KEEPER.

TAKING HONEY IN CENTRAL AMERICA.

READING of taking honey in Assam in your Number of the 7th inst., reminds me of taking honey in British Honduras. There, however, precautions are not needed, the honey bee having no sting, and being, so far as I recollect, the only insect in that unpleasant country without a weapon of offence and a strong inclination to use it. The Indians (Asteas) are sometimes employed in the mahogany-cutting works, and their fondness for honey makes them take every nest they can. All the nests I saw were in hollow trees. The Indians having found them (and to find them requires pretty sharp eyes), cut down the tree, and having sounded it with their axes, would cut it open where they found the nest to be. The honey was very clean and good; the combs were

not hexagonal, but shapeless, like the cells in an ant's nest. The wax, in comparatively large quantities, was taken by the Indians to make candles of. The bees were small black and stingless. We met with others, by no means still, but got no honey from them.

It may interest some of your readers to hear that the centre of the large hanging ant's nests the Indians find is made of white grubs which they said were as good as to eat, but I confess I had not courage to attempt. Once I believe I did eat some at an Indian festival, but they were sweetened rice, but my companion found out they were, and I could not persuade myself to try taste again.

If I had known anything about orchids I might have written plenty about them, as Guatemala abounds in but, unfortunately, I was as ignorant of them then as now. Should I ever find myself there again I will try to be more useful to the readers of THE JOURNAL OF HORTICULTURE.—V. G. C.

DRIVING BEES TO AVOID THE WAX MOTH.

SINCE last writing to you I have lifted the hive off its floorboard. In the feeding vessel I found maggots and also a live moth of a grey colour and life, but it was thrown into the fire; the former I have for your opinion.

Having a nucleus box, half filled with honey and on purpose driving them into it at once before the queen commences laying, and so rid them of the plague.—T. S.

[By driving the bees into a nucleus box at this time you will destroy more brood than you fancy, and probably do the stock irreparable injury. Better have patience until fine mild weather set in, and then transfer both and combs to a frame-hive as directed in page 442 third volume, when the extirpation of the moths will be easy. The maggots accompanying your letter are like the wax-moth.]

STEWARTON HIVES.

If your correspondent Mr. Raynor would apply to Paton, joiner, &c., Stewarton, Ayrshire, he could obtain an abundant supply of boxes.

The boxes need not be confined to 4 inches, but made to order of any depth. I have seen boxes 8 inches deep, principally for "body boxes" and some for honey boxes on strong hives. Bees can easily be housed in four-inch boxes by putting two together. With a nice bee-house and Stewarton hives, the most nervous and unskilful may manage successfully without getting or killing a bee.

The Stewarton bee-keepers in favourable season take two crops of honey, one off the clover, and the other off the heather, to which they transport the bees several times. The first crop is considered the best. A four-inch box full, weighs about 20 lbs., and sells at from 2s. to 2s. 6d. pound.—P. M.

OUR LETTER BOX.

STORING EGGS (*An Amateur*).—There is a difference of opinion as to whether the small end of each egg should be upwards or downwards in a shell sand.

PIGEONS IN CONFINEMENT.—Can I successfully breed and rear healthy fancy Pigeons in a large spare room without allowing them to fly out in the air? Of course a window can be kept open and covered with a wire netting.—F. T. H.

[You can keep them well in that room. Most of our best fancy Pigeons are bred in rooms. Mr. Eaton, of 37, Red Lion Street, Clerkenwell, E.C., has published a diagram which will assist you to fit up the room.—B. F. B.]

BOOK ON POULTRY (*S. W. C.*).—It is in preparation, with plates, and will appear early in the summer. We can give no further information at present.

GAPES (*J. Skinner*).—Chickens so affected should have a piece of chalk given them as a pill about the size of a pea. Put also a pint of water in their water. Give them also daily a little burnt cork in their water.

BUYING BEES (*A. B. C.*).—We cannot give you the information you require as to how many stocks you need.

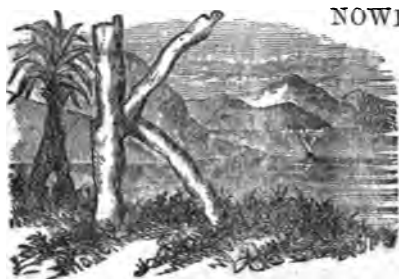
GLASS IN AN AQUARIUM (*G. G.*).—We always use white lead.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MARCH 28—APRIL 3, 1885.	Average Temperature near London.			Rain in last 35 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
28	Tu	Gorseberry flowers.	53.3	34.3	43.8	15	46 af 5	21 af 6	14 6	39 8	1	5 7	87
29	W	Privet foliates.	53.9	33.9	43.9	12	44 5	20 6	49 6	49 9	2	4 49	88
30	Th	Hazel foliates.	53.8	34.9	44.4	16	42 5	27 6	23 7	0 11	3	4 39	89
31	F	Wood Sorrel flowers.	54.8	34.0	44.4	16	39 5	29 6	14 8	morn.	4	4 12	90
1	S	Ground Ivy flowers.	51.9	34.6	44.8	21	36 5	31 6	5 9	4 0	5	3 51	91
2	Sun	5 SUNDAY IN LENT.	53.5	33.6	44.5	20	35 5	32 6	2 10	59 0	6	3 35	92
3	M	Holly foliates.	56.8	35.2	46.0	19	33 5	31 6	2 11	44 1	7	3 18	93

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 54.7°, and its night temperature 43.6°. The greatest heat was 73° on the 3rd, 1813; and the lowest cold, 16°, on the 1st, 1838. The greatest fall of rain was 1.19 inch.

DAMPING-OFF AND MILDEW.



NOWING that the preservation of bedding-out plants during the winter months, especially Geraniums, Verbenas, Lobelias, &c., is a matter of very general interest to nearly every class of your readers, I

venture to forward you a few remarks upon two of the greatest difficulties which have to be contended with during the dark days of winter—that is, damping-off and mildew. It is hardly right, perhaps, to class the two together, as they do not always proceed from the same cause; and certain classes of plants, such as Verbenas and Roses, are more liable to mildew than others, whilst Geraniums, which are very apt to damp-off during the winter, are rarely, perhaps, attacked with mildew.

I will begin with the damping-off of plants, which I think owes its origin more than anything else to defective root-action. It is a very generally-received axiom, and one which is confirmed by almost every book on gardening that one takes up: Keep your plants as dry as possible during the winter. Now this rule misleads amateurs or unpractised gardeners more, perhaps, than any other, because they forget that very essential proviso, that the plants are only to be kept as dry as is suitable to their health. There are many persons who withhold water from their plants just the same in whatever position they may be placed, whether on shelves, stages, or on the floor of the house, and again make no difference between a house heated by hot-water pipes, a flue, or hot air. Now all these points ought to be carefully borne in mind, because a Geranium in a large pot on the damp floor of a cold vinery, with just sufficient heat in the hot-water pipes to keep frost out, will, perhaps, remain in a healthy state all winter without any water; whereas young autumn-struck plants of Geraniums on a shelf in a house heated by a flue, and kept near the light and air, may require water every two or three days. Very often it happens that Geraniums are left on stages unwatered for many days after their leaves have begun to flag, and till the balls of earth have become so dry that when they are watered all the water passes down the sides of the pots, leaving the balls as dry as they were before. The consequence is all the young rootlets perish, and then, if a week of damp sunless weather set in, the leaves, which had begun to droop from want of moisture at the roots, will eventually damp off from not being able to breathe—in short, they are no longer capable of performing the functions of vegetable life; and though, perhaps, in the case of a Geranium, the plant may be able to push some few young

leaves, or some of the young leaves may not have suffered as much as the old, still it too often ends in the death of the plants. When once the young rootlets are killed it is of no use supplying water to the plant, as it will not make fresh roots till the return of spring, or till it is put into a warmer atmosphere, or gentle bottom heat.

Now what is thus fatal to a Geranium is still more fatal to a Verbena, a Lobelia, or Calceolaria. With respect to the latter, nearly all your readers must know that it will more readily stand excess of moisture and cold than of heat or drought; there are no plants, therefore, so easily kept through the winter by means of a cold frame, and which require so little care as Calceolarias; but I have often heard complaints of Lobelias damping-off, whereas they will withstand almost as much cold and moisture as a Calceolaria, but require rather more ventilation; and far more plants, both of Lobelias and Verbenas, suffer from excessive dryness at the roots than from wet.

During bright frosty weather and moonlight nights, when it is necessary to keep fires constantly going, the air of a greenhouse becomes exceedingly dry. No doubt plants can resist frost better when they are dry than when the atmosphere of the house is charged with moisture, so that as a general rule it is not wise to water plants late in the day so as to have the floors and stages wet when all is shut up for the night. But if it be true that plants can stand more frost when they are dry, it is equally true that frost will less readily penetrate a moist atmosphere. I have raised the temperature of a house, 25 by 14 feet high in front and 13 at the back, and all surrounded by glass, except the back wall, from 40° to 44° in a very short time on a frosty night, merely by pouring water into the openings of the hot-air flues, the house being heated by a hot-air apparatus; and where houses are heated by flues (which are apt to dry the air too much), evaporating-pans placed on the top of the flues, and a slight syringing of the sides of the flues, will not only help to give a more healthy atmosphere to the plants but will materially aid in keeping frost out. Where stages and paths are wet the evaporation only produces cold, but a little water on heated flues or hot-water pipes helps to raise the temperature.

I have hitherto said nothing about mildew. This is no doubt the growth of a fungus on the leaf or stem, but what first causes the fungus to grow and how many different kinds of fungi there are which we commonly know by the name of mildew is a far wider question. Mildew is seen under extremely different circumstances, but I think is generally caused by defective root-action, the roots not being able to supply the sap fast enough to the leaves, or sometimes from the leaves being in a higher temperature than the roots. Verbenas and Roses suffered very much last year in the early summer, especially in dry soils and sunny places, and it would seem as though mildew attacking healthy young Rose shoots exposed to sun and air in the open ground must differ very much from the mildew which attacks plants in cold damp houses in the winter, and yet I am still inclined to

think the cause is much the same. There is no more certain cure for mildew on Roses in summer than a thorough soaking of water at a temperature of 80° or 90°. "UPWARDS AND ONWARDS," I think, speaks of liquid manure heated to 140°. This seems a severe measure, but if the plants do not suffer from their bath I have no doubt it would effectually check the mildew. In either case, however, the remedy is owing to the roots being excited so as to give a more abundant supply of sap to the plant.

When a mildewed leaf is examined under a microscope a fine reticulated white substance like inspissated sap is seen to stand on hair-like tubes quite above the leaf; it can be scraped off with the point of a knife, leaving the cells of the sap-vessels of the leaf flattened. I cannot trace any cellular formation in the mildew, the white substance seeming more like sap which had escaped from the leaf, owing to the leaf being punctured by the root of the fungus. I should like to know whether any of your readers who have a microscope with very high powers have ever been able to trace the different parts of the fungus.

Any check to the sap predisposes, I think, the leaf to the attack of mildew, and the best way to avoid it in winter on Verbenas and other plants is to keep them steadily but constantly growing, and to have a thorough circulation of air round the plants. Wooden stages, with plenty of air between the bars, and hot-water pipes or flues underneath, with the outer air coming directly on the heated pipes through openings in the front wall, so as to create a thorough circulation and yet to have the air heated before it ascends, is about the best way to succeed with Verbenas; and it is much better to put the plants into a hotbed for a fortnight in the spring and let them make young wood before taking their cuttings, rather than to try and strike the tops which have been on all the winter; no time is lost in the end, as there is as much difference between striking fresh quick-grown cuttings and old ones as there is between striking the old wood of Calceolarias and young shoots.—X. Y. Z.

THE LATE MR. F. CHITTY.

MANY readers of THE JOURNAL OF HORTICULTURE, who have, in common with myself, read the interesting and thoroughly practical articles on general gardening, written by the late Mr. Chitty, will feel that his loss to the lovers of horticulture will not easily be replaced, and all must feel deep sympathy for the bereaved widow and helpless children of such an estimable man.

The letter from his employer in last week's Number of THE JOURNAL OF HORTICULTURE, proves how well he was beloved by his personal friends, and how much he was respected and esteemed by his employer.

What a lesson this teaches both to employers and employed! and how forcibly does it illustrate the advantages to be gained by both, when there is such a reciprocity of feeling as this existing between an employer and his gardener. What a large amount of pleasure it would bring to the employers of labour in all its various branches, and what a degree of happiness and contentment it would bring to the hearts of those whose bread is gained by the labour of their hands, if this feeling of reciprocity was more widely extended. On the part of the employer of labour, the feeling would be one of confidence instead of suspicion and mistrust, and on the part of those employed content, happiness, and a keen appreciation of their master's worth. This would lighten the burden of their daily toil, and the constant wishing for the time to leave off work, thus prolonging the day, and the habit of leaving many things undone, and doing that which is done in a careless and slovenly way: this would be removed by the desire to do all in their power to make a suitable return for the respect and confidence reposed in them. The mind would thus be so intent upon, and absorbed by the duties of the day, that the fast-fleeting time would not be noticed. Man would, therefore, return to his home at the close of his day's toil, in the happy consciousness of having done his duty to his employer, and with the satisfaction of having omitted nothing necessary for the attainment of the object of his labour.

Let us all, then, try to emulate the good examples set before us by him who has gone from amongst us, and by his

worthy employer, who still lives to do justice to his late servant, and to be a comfort and help to his widow and fatherless children; and let us hope he may long live, and be the means of inducing many employers of labour, with whom he may come in contact, to follow the example he has so nobly set.

I enclose a small sum, from myself, foreman, young men, &c., employed in the gardens at Oulton Park, for Mrs. Chitty, and hope all gardeners will respond to the appeal so kindly made by Mr. Webley, in behalf of Mrs. Chitty and her bereaved family, and show that they are, as a class of men, not insensible to the cause of the widow, and the cry of the helpless.—J. WILLS, Oulton Park.

[A list of subscriptions received since our last issue will be found among the advertisements on our sixth page. We have more which we will acknowledge next week.]

MR. BATEMAN AND THE CHISWICK GARDEN.

ALL of us interested in gardening must feel a high respect for the name of the gentleman at the head of this article, so well known is he as a patron of the science. In botany in the path he takes he is an authority, and in gardening with the same qualification he is to be looked up to; but an experienced general horticulturist, after his remarkable speech at South Kensington, we cannot consider him.

Alas! that we are not likely again to see at the head of the horticultural world a man like our once revered President T. A. Knight. "We ne'er shall look upon his like again!" I have been led into this train of thought by carefully reading the assertions of Mr. Bateman in his speech of February 14th, so very carefully reported in the "Proceedings of the Royal Horticultural Society."

Mr. Bateman commences by saying that "Chiswick is in a most efficient state," "making due allowance for the change of circumstances in the horticultural world." I am most willing to allow that Chiswick in its limited way of doing things is in good order; not a shadow of blame can be cast on the superintendents, but, then, how poor and trifling as a grand national experimental garden is everything there. I am often compelled to tell my foreign friends who make inquiry for our public garden where horticultural experiments are carried out, that we have no such garden; for Chiswick with its small and inefficient houses, except that extravagant folly, the conservatory, now a vinery, has nothing in it worthy of the notice of gardeners either foreign or English.

The "changes in the horticultural world" are all changes for progress, and not the mere keeping in good order an effete garden. I remember in old times, some thirty or forty years ago, the keen enjoyment I used to feel at Chiswick, only because it was then in advance of the age—it ought to be equally so now; and when we look at the enormous sums that have been squandered in the last few years by our Society one cannot help feeling deep chagrin that we as gardeners have nothing to show but a poor gaudy place all brick and stone, and an experimental garden without experiments.

There are no "impossibilities" in the way, as stated by Mr. Bateman. "The change which is taking place in the aspects of horticulture" calls for a change, and a great one, in our should-be national garden, so as to make it worthy of the present day. The changes in it ought to have advanced step by step with the gardening knowledge of the times, so that at this moment we might be able to show the whole world how much we are in advance of all the nations upon earth.

After enumerating three points in which Chiswick is eminently useful, commencing with, "first of all an experimental garden," Mr. Bateman passes to his fourth consideration—the Chiswick Shows. We all well remember their great popularity; their decadence was not owing to "rivalry, emulation, and competition," but solely to bad management—a lack of the *suaviter in modo*—a lack of skill in arrangement—a lack of that active superintendence which an efficient Council ought to have given; but there seemed no activity in it; all was left to one or two, who were overworked, and required the guidance of good and wise men.

and so the fall came. Chiswick at this moment ought to be the one fashionable flower show near London; its distance is an advantage, for whereas the Regent's Park Gardens would take off the great crowd of London sight-seers, Chiswick, with the price of tickets wisely arranged, ought to be the resort of the *élite* of society, not probably to see the exhibitions, but to meet the pure *crème de la crème*, and I have not the least doubt but that the "Chiswick Shows" might have been kept up to the present day if an active and wise Council had taken proper measures; but as far as I remember there was some adverse influence hanging over the Society for many years. The Council seemed inert, active men were kept out, and those that by some mistake were admitted were always outvoted; and so the Society kept "mooning" along till debt overwhelmed it, then came that ever-to-be-lamented sale of the library, and ruin, so far as the objects of the "Horticultural Society of London" extended. All that Mr. Bateman states about the decline of the exhibitions at Chiswick, and their being left "in consequence of rivalry" to the genuine votaries of horticulture, too few to "make them pay," is a mistake.

With regard to "another respect in which the garden was eminently useful—as an arboretum." I can only state from my knowledge of hardy trees and shrubs, which with, perhaps, some little presumption, I am inclined to place nearly on a level with that of Mr. Bateman, that if I were a nurseryman and wished for a site near London, on which to cultivate Coniferae, Rhododendrons, shrubs of the order Ericaceae with a little assistance, and all the evergreen shrubs and trees and fruit trees known in our gardens, I should select Chiswick. The fertility of the soil is remarkable, and the slight assistance it requires to make hardy trees and shrubs flourish, has been to me for these thirty or forty years past a marvel. We have only to look at the coniferous trees in Mr. Glendinning's nursery, at Chiswick, in the immediate neighbourhood of the Gardens, to see at once how mistaken Mr. Bateman has been in his consideration of the present state of the Chiswick Garden. It is true that some few of the trees suffered severely in 1860, from which they have scarcely recovered; but no injury to the trees from the smoke of London can be discovered. With regard to the rivalry of Kew, that is *par excellence*, the people's garden; but Chiswick should be our arboretum, full of arboricultural beauty, and, above all, quiet, owing to its visitors being select and lovers of the science. As to the soil which Mr. Bateman abuses, I have always found the loam, spreading over the thirty acres (not twenty), reckoned deep and fertile. Where can be found a finer border of Peach trees, or trees managed more perfectly? Where do Pear trees flourish better? And where do kitchen garden crops succeed better? All these crops show plainly that the soil is not a "poor gravelly soil."

In my opinion, in which I am not solitary, it is not "childish" to talk about reviving the horticultural interest of Chiswick. Far from it, for with only a small portion of the extravagant sums of money spent at South Kensington, well-spent at Chiswick, it might be, and ought to be, at this moment the pride of the horticultural world.

We now come to the third point discussed by Mr. Bateman, the introduction of new plants and trees. What valuable opportunities have been lost within the last twenty years! While our northern neighbours were organising societies for exploring the north-west coasts of America, whence they introduced so many valuable trees, and while collectors were gathering seeds for private persons of that grandest of all coniferous trees, the Wellingtonia, which alone would have redeemed the failing prospects of the Horticultural Society of London, the Council, apparently effete and lifeless, calmly looked on. Then within these few years came Japan with its invaluable stores of trees and shrubs, brought to us by private enterprise, without the least attempt on the part of the Society to be first in the field. When one considers these lost opportunities, one can scarcely believe that a horticultural society in this rich country could have been in existence at the time. With energy and money properly applied, what an arboretum might have been formed at Chiswick, not only in the open air but under glass; for if light roomy structures had been built—not such massive extravagant houses as the "great conservatory," but light, strongly-built, reasonably-priced, unheated glass structures—many Himalayan trees and shrubs, and all those from

Japan, might have been now in full luxuriance, and a pattern to the whole gardening world, which at present is little aware of the extreme beauty of what are called half-hardy trees and shrubs when grown in unheated houses, and even of many that are hardy enough to stand our winters, but requiring more heat in summer to fully develop their beauties, and this they can only have under glass. Now, experiments of this kind, of the highest interest to all who have a cultivated taste, should have been carried out by the Society at the Chiswick Garden, making it the pride of the country.

With respect to the fourth point in Mr. Bateman's address, I am most willing to acknowledge that a fair collection of varieties of fruit exists there, but not beyond that in the hands of others in this country. The distribution of scions for grafting, which that experienced horticulturist Mr. Cole says, "was never more fruitful than it is at this moment," and which the intelligent audience greeted with "hear, hear," is a small redeeming point in the doings of the Society. But how small, how insignificant, how odd, that only one little "ha'porth of bread" should be found worthy of a cheer in a very long apologetic address! Yes, there was another "hear, hear" when Mr. Bateman alluded to the Chiswick of the present and the past. A few words will correct the sophism uttered. The Chiswick of the past was before its day; the Chiswick of the present is behind its day.

As to the *lapseus lingue* respecting the dearth of "eminent practical horticulturists," it was of course only a slip for which Mr. Bateman is doubtless very sorry, and he will of course in due time apologise. The next slip is so full of burlesque and so ironical, that no wonder it was received in deep silence. *La voilà*, "If any gentleman has any horticulturist in his mind more profoundly versed in the mysteries of the science than any members of the present Council, he has only to mention his name, and he will be elected by an overwhelming majority." Now just imagine one or two of the old Fellows selecting half a dozen good sound practical gardeners and men of business, and recommending them to the Council for election! What a mustering would there have been of Fellows and Fellowesses to assist in keeping them out. Mr. Bateman should not have made the assertion. Why, I could have pointed out a dozen or a score of good and true men, "more profoundly versed in the mysteries of the science of gardening," than any member of the Council, not forgetting one who has been a good practical gardener.

I regret to find that Mr. Bateman in his apology for Chiswick has omitted to mention the education of gardeners, which ought to be now in progress. Several eminent men last year lent their aid to concoct a scheme by which Chiswick would have been a centre of education and registration for gardeners, so that any gentleman requiring a gardener could at once go to the centre of gardening for one. Instead of this being promptly and fully carried out, it seems that "arrangements are being made" for gardeners to undergo an examination in botany by the Society of Arts. How unworthy of an old-established Society! This seems a sort of "shifty" policy that one cannot understand. Just imagine the Geographical Society, for instance, making arrangements for their neophytes, if they had any, to undergo an examination by the Linnæan. A powerful Society like the Royal Horticultural ought to do its own work.

As regards botany it is very agreeable, although not essential, for one's gardener to know the rudiments of this rather loose science. Surely it must to a certain extent deserve the name, for its professors have hitherto made it a point to agree to disagree; still, arrangement and classification are necessary, and a gardener with an intuitive taste for it, after knowing its rudiments, may make himself a proficient, but as a general rule a good gardener does not make a good botanist, nor a good botanist a good gardener; they are distinct species of the genus *homo*, and both good and useful, the former a man of active energy, the latter a man of quiet persevering research.

I have now gone over Mr. Bateman's apology for Chiswick, I can give his earnest speech no other designation, and, in common with most of the old Fellows of the Society, regret there being any occasion for it. Allow me now to state how our old favourite garden should be managed.

One good clever gardener should be there to give his undivided attention in carrying out experiments on a far different scale to the present. Some enlightened accomplished gardener should be on the Council to suggest such experiments, and to see them carried out, so as to put at rest all theoretic culture, and enable the Council to say to the gardening world, Come to Chiswick and see. I could, and I would if I thought there was the least chance of their being carried out with energy, give a list of horticultural experiments of great interest still untried; but while our Society has that millstone round its neck—the gardens of South Kensington—nothing of the kind can or will be done. I see no remedy for this state of things, unless the Royal Horticultural Society ceases to fritter away its time in giving certificates for music, sculpture, table puerilities, Primroses, Violets, and Wallflowers; or to form a National Horticultural Society. I have no wish to be hasty, and I shall continue to pay my four guineas annually till a society of true earnest lovers of horticulture can be inaugurated to show to the world what can be done by English gardeners when properly directed.—F.R.H.S.

LA CONSTANTE STRAWBERRY.

WHEN I was a Harrow boy, I used to go to London on a Saturday, to visit my relative, the Hon. Mrs. Agar, at 1, Dean Street, South Audley Street. Her son, Mr. Agar Robartes, the present Member for Cornwall, was also a Harrow boy. With him I went to London. On one occasion I went to Astley's, and saw acted the then famous "Tom and Jerry," and also the "Invincibles." On another occasion I went to Drury Lane, or Covent Garden, and saw a play acted, which convulsed everybody. Roars were excited by the announcement, "Here's Monsieur Tonson come again!" Well! here's La Constante come again! and I am one of the "Invincibles!" I do not want the last word, but Mr. de Jonghe, unintentionally of course, has not exactly "resolved" my statements. I refer only to the first. The others I admit. I never said La Constante was not hardy in the sense he intends you to understand—namely, that it will not stand the cold of winter. On the contrary, your readers will remember that I stated it was suited to clay lands, and a northern aspect. It was not here *summer-hardy*.

Mr. de Jonghe's offer is a very fair one, and I hope amateurs (it would not succeed with the generality of *quasi* Strawberry-growers), who have good land and take pains with Strawberries, will give it a trial.

I received a letter from Mr. Turner concerning a new seedling of Mr. Bradley's, in which he says, "My experience confirms Mr. Radclyffe's respecting La Constante; but those who differ may be right, as far as their experience goes. Different soils and situations have a great effect on some kinds. I cannot get rid of the impression, that it is a variety that will not remain very long in our collections."

I believe I sent it both to Mr. Turner and Mr. Rivers in the first place, having every desire to see it propagated in this country. I told them at the time, after my experience of it and great pains, that it did not suit me, but that it would, probably, suit their finer lands. I sent it also to Mr. Taylor, who lives in the fine vale of Mowbray, hoping that it might suit him. He has not had it long enough to be sure about it. It may yet turn up well, when put in early enough. It is, however, in any land strictly an amateur's Strawberry. It is not a Strawberry plant that can be recommended to go into all lands and all hands. No one can have read the statements made by the defenders of La Constante without perceiving that the efforts have been laborious, and the pleading "special." I remain a member of the "Invincibles," and promise, unless evoked, not to act again the part of "Monsieur Tonson,"—W. F. RADCLYFFE, Tarrant Rushton, Blandford.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—At a meeting of the Committee held on the 20th inst. it was resolved that an election of three pensioners shall take place in July next. It was also resolved that the anniversary dinner shall take place on Friday, July 7th, on which occasion Jas. B. Jeffery, Esq., of Woollen Hall, Liverpool, will take the chair.

LIVERPOOL SPRING FLOWER SHOW.

THE flowers! The flowers! The stars that gem our earth, even as the stars themselves are the flowers of the sky! Who does not love the pretty flowers at all times and all seasons? beautiful as they are in the dewy morn of summer, and the calm eve of autumn; and if possible, still more beautiful and engaging, not only by contrast, but by all the delightful associations of promise and of hope, amid the frosts and the snows of winter, and the rude surly blasts of spring. Such, as we were permitted to read them, we feel convinced were the prominent sensations that passed through the minds of the more than three thousand visitors, who happily promenaded among the tables and banks of floral loveliness in the noble St. George's Hall, at Liverpool, on the 15th March; the fine proportions of the gorgeous Hall itself, and its rich artistic finish and embellishments, being for the moment lost sight of amid the attractions of some fifteen hundred entries and collections of plants, embracing such a blaze of Azaleas as reminded one of May and June, the dense masses of rich Rhododendrons, the many gaudy-coloured Tulips from a thousand bulbs; and not only the striking contrasts in colour, but the sweet fragrance that loaded the atmosphere, from more than seven hundred Hyacinths. And as if it were not enough that the organs of sight and scent should be gratified, the ear was regaled with beautiful music from Mr. Harrison's band in front of the grand organ, and during the interludes a splendid thrush made the arched roofs echo and re-echo with thrilling and plaintive notes, causing us to feel as if we were surrounded with choirs of the sweetest songsters of the "woodlands wild."

So far as we could make out in casual conversation, there are two horticultural and floral societies at Liverpool, which are severally independent of, but which act rather in unison with than in anything like opposition to each other. The one holds its exhibitions chiefly in summer, and is so far patronised by the Corporation as to be permitted to hold its *fêtes* in the Park close to the Botanic Garden, which at that time presents features in the new style of flower gardening hardly to be rivalled elsewhere. At these times and only then, as we understood, visitors to the Botanic Garden are allowed to traverse the beautiful lawns. At all other times visitors as a matter of necessity are confined to the broad handsome walks. The other Society, of which this is the third season, holds its *fêtes* early in spring and late in autumn; and though it boasts distinguished patronage on its prospectus, it is well known that it was chiefly set on foot to meet a felt want, by Mr. Tyerman, the much and generally esteemed manager of the Botanic Garden, ably assisted by Messrs. Ker, as Secretaries, and a Committee of nurserymen and gardeners connected with the immediate neighbourhood.

The decided success which this latter Society has already achieved, and the increased stimulus it has given to the culture of flowers for spring and autumn decoration in the western metropolis, have been so great that it might be advisable to merge in the management, not only cultural skill, but the enthusiasm of the amateur, and the matured judgment of men of business. We can well understand the anxiety felt on such occasions by those who sustain the chief responsibility, and who can receive no reward for their efforts but the consciousness that they have at least endeavoured to extend the range of knowledge and of happiness. We may differ much as to our estimate of true greatness, and may even regret that some called *great* have but too truly left their "footprints on the sands of time;" but we can hardly differ as to our estimate of the self-denying efforts of those who are quietly leaving their marks on human hearts, by opening up new fields of investigation, and pure fresh sources of enjoyment amid the contemplation of the beautiful.

On entering the Hall the effect was very striking, though with the same materials it might have been made much more so without any confusion as to the separate classes. To this we may refer before we conclude. Suffice it to say that the arrangement left nothing to desire so far as bringing the competitive plants in each class at once under the eye of the Judges. Immediately in front of the orchestra, and beneath suspended baskets, a long circular stand was filled with beautiful bouquets, and we would suggest that in future the awarding of the palm of honour should be left to a

chosen committee of ladies. The difficulty for any man to decide in the matter arose from the simple fact that they were all so beautiful. Ladies did award the nurserymen's prizes here, and Mr. Cutbush, of Highgate, and Mr. Ryland, were the successful competitors. There were at least a dozen bouquets in the best taste, and of the richest materials. We hope the ladies satisfied themselves, and if they did they far outshone the gentlemen judges. The decision among amateurs and gardeners at length rested quite as much on a matter of style as of intrinsic merit. The first bouquet was centred with a fine white Camellia, raised well in the centre, surrounded with a band of flowers of blue Hyacinths, slightly dotted with Maiden-hair Fern and the crimson flowers of *Euphorbia jacquiniæflora*, and then a broad band of white and red Roses, bordered with flowers of white Fuchsia and a little garnish of Maiden-hair. The second was one of some half a dozen in the flat style made of the rarest Roses, *Stephanotis*, &c., relieved by Mosses and Ferns, and decorated with lace. The third was very pretty though of simple materials. The centre was considerably raised, consisting of a circle of flowers of red Hyacinths, from which went four spokes or lines of red to the circumference, which again was formed of a rim of red and pink Hyacinths. This left four spaces to fill, and two of these were filled with bands of blue and lilac Hyacinths, and the two others opposite each other with flowers of the white Hyacinth; some Maiden-hair, &c., was used as garnishing. The successful competitors were for first and third Mr. Lythgoe, second Mr. Turner. We have been led on to this as it will suit several correspondents, but we have strayed from the description of the plants. These nosegays alone, so numerous and so good, gave an idea of the floral treasures of the district.

On the lefthand side from this orchestra end, a bank of Azaleas ran the whole length of the Hall, and on the right-hand side a bank was filled with Rhododendrons, and other plants. The centre of the room was occupied with three tables, with wide spaces for visitors between, that on the lefthand side was chiefly filled with fine-foliaged plants, *Primulas* at the sides, *Narcissus*, and fine pans of *Lily of the Valley*. The central table was wholly filled with Hyacinths at the sides, and bush and standard *Mignonette* in the centre. The other table was filled with Tulips and *Cinerarias*, and the end opposite the orchestra had some fine single specimens of greenhouse and stove plants, &c.

Leaving a correct list of the prizes to the Liverpool newspapers, we will just take a glance of the prominent features, with such running comments as may be useful and interesting. And first, of Azaleas, as perhaps, the most prominent feature in the Show, the first prize was taken for six small, bushy, compact plants sent by Mr. Sorley, gardener to Zwicklenhart, Esq., consisting of Duke of Devonshire, *Elegans*, *Exquisita*, *Coronata*, *Dilecta*, and *Fielding's White*; the second prize was taken by the same grower for plants very similar; all the twelve being dense, low bushes, as wide as they were high, and mostly concealing at least one-half of the pot. The third prize was taken by Mr. Williams, gardener to C. Mozley, Esq., and contained good large plants of *Empress Eugénie*, *Immaculata*, *Queen of Whites*, &c., but they were not so well furnished at the base as the smaller and younger plants. In three Azaleas, the plants were very fine, and here Mr. Williams took first and third; Mr. Wood, gardener to F. W. Medley, Esq., second; and Mr. Sorley, third; and extras were given deservedly to Messrs. Turner and Leadbetter. For single plants, the first prize was given to Mr. Williams, for a large broad-based plant densely loaded with bloom; second to Mr. Lythgoe, for a dense massive plant of *Apollo*; and a third for a fine plant to Mr. Orr, gardener to H. Pierce, Esq.

For forced hardy plants, the first prize was taken by Mr. Morris, gardener to W. D. Holt, Esq., for well-bloomed plants of *Weigela roses*, *Deutzia gracilis*, *Rhododendrons*, and hardy Azaleas, and second and third were taken by Mr. Leadbetter, chiefly for Azaleas and *Rhododendrons*. Passing from this bank and along the end of the Hall, we come to the single specimens of stove and greenhouse plants, the first prize being given to a fine plant of *Acacia Drummondii*, a mass of yellow flowers, growing in a pot about 14 inches in diameter, and we should judge the plant to be about 6 feet in height, and the same in diameter of head. The

second was a *Bletia Tankervilleæ*, with eleven spikes of bloom; and the third was a barrel-shaped *Rhynchospermum jasminoides*, the scent of which would have been more telling, but for the perfume from the Hyacinths. On the righthand corner, first and second prizes were taken for standard Roses in pots, by Mr. Maunderson, gardener to H. Jones, Esq.; and for dwarf Roses in pots, prizes were taken by Mr. Maunderson, Mr. Hignett, and Mr. Wood. Here, too, a prize was awarded to a fine-grown plant of the double-flowering Peach.

For six stove or greenhouse plants, the prizes were taken by Mr. Dunbar, Mr. Williams, and Mr. Wood. Besides good Azaleas, the first gentleman had neat plants of *Pimelea Nieppergiana*, and *spectabilis*, an interesting plant of *Acacia longiflora magnifica*, *Eriostemon buxifolium*, and *Franciscæa confertiflora*. Mr. Williams had fine plants of *Adenandra fragrans*, with pinkish bloom heads, and that rather troublesome plant, *Boronia serrulata*, in a robust state. The bank of *Rhododendrons* was nicely in bloom, and the prizes were well divided, but there did not seem anything remarkable except a light variety, *Rhododendron præcox*, a hybrid raised by Mr. Davies, of Larkfield Nursery, Wavertree, and said to be very suitable for early blooming, whether forced or not.

We have now arrived at the orchestra again, after passing several baskets, such as are used for flat packing-baskets in nurseries, some 3 and 4 feet in diameter, filled with plants in bloom. Two or three of these were done with much elegance and taste so far as the flowers were concerned, but others were pitched or tumbled in, to look more natural we presume, and certainly they bore little traces of art; and in one case only did we notice any attempt to hide the rough unpeeled sides of the willow baskets. We would recommend all such rough baskets to be dispensed with in future, and to substitute for them neat baskets of a definite size, to be filled with plants in pots, but the pots all hidden, or to be filled with cut flowers; and if all the boxes or baskets are of one defined size, we have no hesitation in saying, that if the same taste is exercised upon them as upon the bouquets, the place in their vicinity will be as crowded and impassable as it was round the nosegays.

The hanging baskets, though seemingly much admired, were a failure, simply because one set were filled with Hyacinths with their upright growth, and the others seemed a great variety of things stuck into wooden Orchid-boxes at random. Hanging baskets ought to have drooping plants dangling from them. To compensate for these suspended baskets in front of the orchestra, and separating the bouquets of the gardeners and amateurs from those of the nurserymen, were some stands of cut Camellias, which deservedly received a great amount of attention.

Having thus walked round the outsides, we come now to the three long tables, the first filled with fine-foliaged plants, *Primroses*, *Narcissus*, *Lily of the Valley*, &c.; the middle table with *Mignonette*, as bushes and standards, along the centre, and the sides with three plants at least in depth, of Hyacinths in pots; and the third table on the right was filled with Tulips on one side, and *Cinerarias* on the other.

Taking this outside table first, we would say that the *Cinerarias* were very passable, but much behind the fine Azaleas and *Rhododendrons*. The Tulips, however, were very fine, and gave the table a noble appearance. Here, among nurserymen, Messrs. Cutbush, of Highgate, took first and second prizes, for twelve pots of double, and twelve pots of single Tulips—that is, for thirty-six plants of each, there being three bulbs in each pot, and not less than six varieties in each collection. As affording some information to those proposing to force these plants next season, we here give the list of the varieties of double Tulips thus exhibited:—*Bex Rubrum*, bright red; *Gloria Solis*, brown, crimson, and yellow edged; *Overwinner*, crimson and white; *Yellow Tournesol*; *Golden Yellow*; *Duke of York*, rose, with white border; *Tournesol*, Red and Yellow. These were first. The second lot also had *Overwinner*, *Gloria Solis*, *Yellow Tournesol*, *Duke of York*, *Tournesol*, and *Imperator*, crimson.

The following are the first twelve single Tulips:—*Duchesse de Parma*, brown, crimson, and orange; *Cramoisie Superbe*, crimson; *Fabiola*, violet and white; *Couleur Cardinal*, scarlet; *Alba Regalis*, creamy white; *Grand Duc*, yellow and crimson; *Cottage Maid*, rose, pink, and white; *Vermilion Brilliant*, scarlet, fine; *Roi Pepin*, fine white, crimson

flakes; Cramoisie Royale, red and white; Proserpine, rich rose; Keizerkroon, rich yellow and red.

The second twelve were as follows:—Cramoisie Superbe, Keizerkroon, Fabiola, Grand Duc, Couleur Cardinal, Vermilion Brilliant, and Proserpine, as above; to which were added—Duchesse de Parma, crimson and orange; Duc d'Arenberg, brown and yellow; Pottebakker, white; Rouge Luisante, fine rose. The very repetition of the kinds by one of the most eminent growers, will give a good idea of the best sorts for early work, and this will farther be promoted by noting the lists of such exhibitors as Mr. Paul, at Regent's Park and Kensington.

Fine collections of Tulips were exhibited by Mr. Maunders, Mr. Williams, Mr. Sorley, Mr. Dunbar, Mr. Mossdale, &c., but the bulk of the kinds will be found in the above lists. We noticed besides showy specimens, among doubles, of *Imperator Rubrorum*, large red; *Marriage de Ma Fille*, red and white striped; *La Belle Alliance*, purple and white; Lord Wellington, singular dark lilac.

The collections of bush and standard Mignonette on the middle of the central table had been good, but were mostly past their best, and might be full of flower in a few weeks hence. The magnificent show of Hyacinths was here the great attraction. Among Nurserymen Mr. Cutbush again bore off the prizes of first and second for twenty-fours; Mr. Grey, of West Derby, second with good plants; Mr. G. Davis, Old Swan, third; and extra prizes to Messrs. Davies, of Wavertree. Mr. Cutbush's collection of twenty-four pots that took the first prize, were as follows:—Grand Lilas, azure blue, large; Princesse Clothilde, pale pink and carmine, large; Charles Dickens, grey blue, large; Macaulay, deep rose; Princess Charlotte, rosy shaded pink; Marie, purplish blue, indigo stripe, fine; Argus, blue with white eye, fine and striking; Alba Maxima, fine large white; Garrick, dark blue; Baron Von Tuyl, dark blue; Grandeur à Merveille, pale blush; Snowball, pure white, large bells, new and dear; Von Schiller, salmon pink; Haydn, lilac mauve; Mimosa, purplish black; Van Speyk, pale, striped with dark blue; La Prophète, pale pink and carmine striped; Maria Theresa, pink and red; Florence Nightingale, pink and carmine stripes; Mont Blanc, fine white; Mrs. Beecher Stowe, fine pink; Bleu Aimable, violet shaded with blue, fine; General Havelock, deep purple, very fine; Queen of the Netherlands, fine, pure white. In the second twenty-four Princesse Clothilde, Argus, Grand Lilas, Charles Dickens, Queen of the Netherlands, Macaulay, Mont Blanc, La Prophète, Mimosa, Grandeur à Merveille, Haydn, Mrs. Beecher Stowe, General Havelock, Van Speyk, Marie, and Florence Nightingale were repeated; the fresh ones being as follows:—Laurens Koster, dark blue, fine; La Dame du Lac, rosy pink; Emmeline, blush with pink stripes; Gigantea, fine deep blush; Duke of Wellington, rose, with carmine stripes; Lina, bright crimson; Lord Palmerston, greyish blue with light eye, good, like Argus; Von Schiller, salmon pink.

These collections were distinguished not only for good spikes on the whole, but good-formed bells, and dense enough to conceal the stems, which proceeded from among short stiff foliage, that showed the bulbs had been encouraged to do their best, without leaves and stems being drawn or enervated by heat. As fine individual flowers could be found in plenty, but these collections above were very good and regular throughout. Among the plants of Mr. Davis were good specimens of Von Schiller, Prince of Orange, rose, striped and shaded with orange; Lord Wellington, Mirandoline, fine white; Latour d'Auvergne, pure white, &c. In the extra awards, among other fine spikes were extra good specimens of Howard, orange crimson; Homerus, dark red; Alba Maxima, fine white; Baron Rothschild, dark red; Albion, dark blue; Anna Paulownia, a fine blush, &c.

Very fine collections of Hyacinths were also exhibited by gentlemen's gardeners, as Messrs. Cahill, Hignett, Williams, Dunbar, Wilson, Sorley, Lythgoe, Turner, Fleming, &c. Among the sorts not mentioned above were fine specimens of Cavaignac, salmon with rosy stripes; Seraphine, fine pale blush; Ida, fine yellow; Alba superbissima, worthy of the name, &c. Were we to go in earnest into Hyacinths, we should like to have every one of these named, with an additional dozen from every celebrated grower of his best kinds.

Last we forget we may also mention that there were some

beautiful Hyacinths that had been grown in water, some very strange flowers of some kind of Arum, that we could not obtain the name of some nice showy plants sent by friends to fill up, a very neat plan of a flower garden, with the colours arranged, and a nice box of black Grapes, sent by Mr. Meredith, that had a very fresh appearance, and the berries covered with bloom. We understood that they had been cut from Vines in 12-inch pots which had been started into growth on the 14th of January, 1864, and though thus fresh, they had been ripe more than eight months. We presume it was Kempsey's Alicante.

We have now glanced at all except the long table in front of the Azaleas, filled with fine-foliaged plants, which were very creditable without affording anything very striking; with Polyanthus Narcissus, which pleased more by their vigour and delightful scent than by their variety; also with nine shallow pans of Lily of the Valley, over which some ladies hung in raptures, and the first three of the nine being extra good, and well worthy of the first prize awarded; and last of all, with a fine lot of single Primulas, the most of which had been better a month ago, and the finest appearing in very small pots. The double Primulas were also showing signs of exhaustion from free blooming, but the first prize was given to fresh small plants, some of which seemed to be seedlings, and which were named Delicata, Candida, Fimbriata, Atro-rosea plena, Rubra, and Old Double White. Next the entrance end of this table stood a pretty silver-chased épergne with one elevated vase in the centre, and four smaller vases branching out at an equal and lower level; and these were so nicely filled with Acacias, Camellias, Epacris, &c., and wreathed into a light airy whole by means of pendent shoots and drooping Ferns and Mosses, as to impart the lesson that great elegance and pleasing effects may be produced in such circumstances in little room, and with but little variety and a small amount of material.

There are several things which this fête would bring forward as worthy of ventilation, but want of time prevents our alluding to more than the three following:—

1. Arrangement. The noble Hall has galleries at two sides and at one end, and from the latter especially a fine view was obtained of the whole floral display. From these points it struck us that the effect would have been more striking, if there had been a background of green branches or green baize, &c., to throw back the colours of the Azaleas, and the Rhododendrons, and if the three tables had obtained variety and irregularity, even as to height, by placing a thin row of the greenhouse and stove collections along their centre. Even the twelve standard Roses stuck up in a corner would have had a good effect on the centre table along with the Mignonette. Others may think quite differently, and they have a perfect right to do so.

2nd. A lesson may be gained as to the hours during which exhibitions in towns should be open to the public. We have known many once-flourishing societies come to grief, and end in loss and bankruptcy, at least be unable to meet their liabilities, and chiefly because the public were admitted only for a few hours in the afternoon. Mr. Tyerman and his confrères are wiser in their generation. St. George's Hall was open on the 15th, from 1.30 P.M. to 10.30 P.M., and the crowded state of the Hall and the galleries during the evening, the well-dressed and well-behaved people being scarcely able to move along and obtain a view of the flowers, in which they seemed much interested, proved incontestably that the system is a good one. It ever seems natural to associate the flowers of earth with the still sweeter flowers of humanity, and a flower fête would be poor indeed, if not graced by our sister woman; but one striking feature of the evening company was the great preponderance of men, and especially young men, showing that they as well as their mothers, and sisters, and sweethearts, were recognising the powers of floral beauty as a refining, softening, and elevating influence.

And, lastly, such successful gatherings should impress on gardeners even a deeper sense of responsibility conjoined with true manly self-respect. As we witnessed the Show, we could not help reflecting that then there were three great educational establishments within a stone's throw of each other. First, there was the railway terminus, a good type of a system which has contributed most effectually for the

rooting out of prejudices and narrow-mindedness, by so greatly enlarging the field of our vision and our intercourse. Then there is the noble building, proof of private munificence and corporate liberality, appropriated to the instructive museum and the spacious library and reading-room open to all classes; and, lastly, there is the gorgeous St. George's Hall, devoted to the means of expanding heart and mind, opening up to many new sources of interest, and impressing all with proofs of the goodness of the Creator, in scattering with liberal hand the elements not only of the necessary and the useful, but also of the sweet and the beautiful. To whom are the inhabitants of Liverpool indebted for this last-named source of enjoyment? Without undervaluing other agencies, we say advisedly, chiefly are they indebted to the simple-mannered, clear-headed, warm-hearted, and hard-handed gardeners. A gentleman lately has raised some commotion by publicly stating that there were no great horticulturists now. It was, no doubt, a slip of the tongue, and some of us who make slips with tongue and pen, should be generous in such matters. St. George's Hall showed no proofs of retrogression. Great men lived before, but greater men and greater gardeners have lived since the times of Agamemnon. If there are now fewer towering trees among the surrounding brushwood, it is because the once brushwood has been cultivated to rival the trees in their goodly proportions. The possessor and the manager of the gardens connected with princely mansions and baronial halls, may not stand alone in intellect and genius; but it is because equal genius and intelligence are possessed, united with untiring industry, among the managers of the gardens connected with the villas of the merchant and the tradesman. It would be well if such capabilities united with sterling honesty were more generally appreciated. Even now, however, every gardener wields a power for conferring pleasure and happiness, and power of all kinds is best associated with felt responsibility. Like all people who live much alone, we are apt insensibly to become prejudiced and narrow-minded. Surely those who are recognised as the means of imparting so much pleasure to others, may well strive earnestly to rub off all those jutting angularities that a kind of seclusion is so apt to engender, and thus endeavour to become as distinguished for breadth of view and expansion of ideas, as for that kindness of heart which has hitherto characterised the brotherhood. The more men thus secure their own self-respect, a very different thing from puffed-up self-esteem, the more will they command and receive the respect of others.—R. F.

ROYAL HORTICULTURAL SOCIETY.

FLORAL COMMITTEE, March 21st.—The second meeting of this year was held at South Kensington on Tuesday last. The plants sent for examination were numerous and interesting. The collections of plants exhibited by several nurserymen and others were very excellent, and a great many certificates were awarded. Mr. Veitch sent several new and rare plants; the following were distinguished by first-class certificates:—*Urceolina aurea*, a greenhouse bulb, the plant unlike any we have seen before, producing large, thick, oval, green leaves, and a cluster of bright yellow drooping flowers, which are tipped with green, with a white margin; *Rhododendron Princess Helena*, sweet-scented, delicate, rose-coloured flowers, one of the hybrids between *jasminiflorum* and an unknown species; *Siphocampylus* species, a new climber, with bright purplish crimson flowers, promising to be very useful and ornamental—(we did not learn whether this was a stove or greenhouse plant; if the latter it will speedily find its way among numerous admirers);—a new distinct tree Fern, *Dicksonia Youngii*; and *Lomaria L'Hermieri*, a beautiful Fern; the young fronds, which spring from the centre of the plant, are of a pale red tint, which, surrounded by the green mature fronds, make it very conspicuous. Special certificates were awarded to plants from the same firm, comprising a beautiful *Cypripedium Lowii*; a very fine specimen of *Cephalotus follicularis*, growing from one crown, an extraordinary example of good cultivation; also a fine collection of plants containing a well-grown specimen of *Asalea Queen Victoria*, *Lycaste Skinneri*, *Acacia Drummondii microphyllum* (which we hope

to see again), *Anthurium Scherzerianum*, *Cymbidium eburneum*, and others. A label of commendation was given to a new *Peperomia*, with bright green foliage.

Mr. Bull sent a new Palm, a very beautiful specimen *Brahea dulcis*, which was awarded a first-class certificate; and *Lomatia elegantissima*, a pretty finely-cut-leaved greenhouse plant, which, in 1864, received a second-class certificate, was now awarded a first-class. Second-class certificates were given to *Elaeagnus japonicus aureo-marginatus*, a useful hardy ornamental shrub for covering a wall; *Arisema ringens purpuratum*, a curious form of the *Arum* family, differing from *Arisema ringens* in its purple stem. Mr. Bull also sent *Elaeagnus japonicus albo-variegatus*; *Elaeagnus japonicus reflexus variegatus*; *Camellia Prince Camille*, a deep rose imbricated flower, of excellent form; *Camellia Comtesse de Gonda*, the flower not open; *Nephradium molle cristatum*, and *Anthurium angustioranum*. A collection of plants, consisting of *Imantophyllums*, *Dracenas*, &c., received a special certificate.

Mr. Parker, Tooting, exhibited his seedling *Rhododendron*, Countess of Haddington, which received a first-class certificate in 1864. Messrs. Windebank & Kingsbury, sent a very choice collection of *Primula sinensis*, double and single-flowering, the four selected received a first-class certificate. These were—Glen Eyre, a fine double purplish rose; *Kermesina*, double carmine or rosy red, a novel colour; *Stewartii*, single white, striped with pink, fine large yellow eye; and Miss Eyre Crabb, single white, striped and mottled with rose. A special certificate was awarded for the whole beautiful collection, which was universally admired. Mr. Williams, Holloway, sent a new handsome *Dracena limbata*, first-class certificate; and *Yucca Stokesii*, *Y. quadricolor*? *Dasyliro glaucum latifolium*, and *Hechtia* species—a special certificate was awarded for the collection, three fine specimens of *Imantophyllum*, and a fine and beautiful collection of *Sarracenias*, which most justly deserved and received a special certificate.

Mr. Wilson Saunders exhibited a very interesting collection of plants, which were awarded a special certificate, containing *Pyrethrum Corona de Regna*, *Drymonia* sp., from Mr. Weir's collection, a seedling *Amaryllis*, the curious *Arisema ringens*, which attracted much attention; *Imantophyllum*, *Gladiolus* sp., from Mr. Cooper's collection, a very minute form of this beautiful flower, white with brownish markings, not much larger than *Lobelia speciosa*; *Solanum vescum*; also a new *Pelargonium*, of dwarf habit, from the Cape. It had bright green lobed foliage, with a deep zone, and the plant grew close to the pot. It will, doubtless, afford a fresh groundwork for hybridising. Mr. Saunders kindly presented the Society with a fine plant. We trust that other amateurs will follow Mr. Wilson Saunders's good example, and send interesting specimens from their private collections, which will make these meetings of so much more importance and interest. Mr. Earley, gardener to F. Pryor, Esq., Digswell, sent a large tray of beautiful cut flowers, which were awarded a special certificate.

FRUIT COMMITTEE—George F. Wilson, Esq., F.R.S., in the chair.—At this meeting prizes were offered for the best three dishes of dessert and kitchen Apples respectively, and for the best collection of salads. In the former class, the only exhibitors were Mr. Earley, gardener to Felix Pryor, Esq., of Digswell; and Mr. George Curd, gardener to M. G. Thoytts, Esq., Sulhampstead, both of whom sent duplicate collections. Those of Mr. Earley consisted of Sturmer Pippin, Cackle Pippin, and Wheeler's Russet; and Cackle Pippin, Fearn's Pippin, and King of the Pippins. The flavour of all in both collections was inferior, with the exception of Sturmer Pippin, which was excellent. Mr. Curd's collection consisted of Lamb Abbey Pearmain, incorrectly named Nonpareil; Vineyard (wrong); and Cluster Golden Pippin; Margil, Adams' Pearmain; Cackle Pippin (wrong). In consequence of the numerous errors in nomenclature, both collections were disqualified, and a second prize was awarded to Mr. Earley.

In the kitchen Apples, Mr. Earley had Lord Duncan, Dumelow's Seedling, and Gooseberry Apple, to which a second prize was awarded; and Mr. Curd had Alfriston, London Pippin, and Norfolk Beefing, all of which were fine specimens and splendidly kept. To these a first prize was awarded. Mrs. Crabb, of Southampton, sent five dishes of Blenheim Pippin, and of Uvedale's St. Germain Pears.

Mr. George Tillyard, gardener to John Kalk, Esq., of Bentley Priory, exhibited several handsome bunches of Muscat of Alexandria Grapes splendidly set with fine plump berries, none of which showed any symptoms of shrivelling.

Mr. Brown, gardener to Mrs. Alston, of Elmdon Hall, Birmingham, exhibited large, handsome, and beautifully-coloured specimens of Easter Beurré Pears, the flavour of which had almost passed, but of which there was enough left to show that it had been of unusual excellence in that variety. The fruit had been grown against a wall.

A seedling Apple, of unusual excellence at this season of the year, was exhibited by Mr. House, of Peterborough, and which has been named "Lord Burghley." It is of medium size, roundish, and slightly flattened; is somewhat bluntly angular on the side, and ridged on the apex, this being caused by the prominent termination of the side angles. The skin, on the shaded side, is of a deep golden yellow, and on that next the sun of a deep clear shining crimson. The whole surface is dotted over with large russet specks, like the Golden Reinette. The eye is somewhat closed, and set in a pretty deep basin, which is uneven in consequence of the angles which terminate there. Stalk half an inch to three-quarters long, frequently a mere knob. Flesh yellowish, very tender, leaving but little mark in the mouth, very juicy, sweet, and with a fine pine flavour and rich aroma. This delicious Apple is now in perfection, and has the appearance as if it would keep for two months hence. Apart from its excellent quality, it is highly ornamental, and has a tenderness of flesh and a flavour similar and equal to Cox's Orange Pippin. It was awarded a first-class certificate.

Mr. Earley, of Digswell, sent a collection of salads; and Mr. R. Marcham, gardener to E. Oates, Esq., of Hanwell, sent two specimens of Rhubarb jam; one made in 1863, and the other in 1864. Both had kept remarkably well and were considered very good; the former suggesting the flavour of Guava jelly.

A collection of seedling Apples was presented by Dr. Hogg, which he had received from M. J. de Jonghe, of Brussels, but there were none among them that attracted particular notice by their flavour.

THE scientific meeting, March 21st, commenced at three o'clock, J. J. Blandy, Esq., in the chair. After the Rev. Joshua Dix, and G. F. Wilson, Esq., had, as chairmen of the Floral and Fruit Committees, read over and briefly commented on the awards made by those bodies, the Rev. M. J. Berkeley proceeded to point out the most interesting of the objects exhibited. Before doing so, however, he stated that a gold medal had been awarded to Mr. Joshua Clarke, for the discovery of a new British plant, *Erucastrum inodorum*, in a railway cutting near Saffron Walden.

At the last meeting a species of *Brassavola*, allied to *nodosa*, and sent home by Mr. Weir, was exhibited. On consulting the "Botanical Magazine," and "Botanical Register," he found that there were two forms of that *Brassavola*, but not sufficiently distinct to be considered species. Mr. Weir's was the same as that figured in the "Botanical Register." A new and curious Gourd had also been brought into notice by M. Naudin, it was the same as that exhibited by Messrs. Barr & Sugden, as Prince of Wales, but on account of its unpleasant odour, he did not think it would ever become useful for ornamental purposes. There were at the present meeting two beautiful *Dendrobiums* from Mr. Bateman—namely, *D. luteolum* and *densiflorum*, in addition to which from another exhibitor there were two fine *Cypripediums*—viz., *hirsutissimum* and *Lowii*. In connection with Orchids, he owed to Major Trevor Clarke, two leaves of some species of *Cattleya*, from Bahia, and which were all spotted. Nothing was more common than for cultivators of Orchids to complain of this, which was the result of a parasitic fungus from abroad, and which would be figured in the forthcoming Number of the Society's Journal. As another instance of a disease imported from abroad, an eminent nurseryman submitted to him (Mr. B.) some *Camellia* leaves attacked by a fungus belonging to the genus *Puccinia*, and on his (Mr. Berkeley's) inquiring if the plants had come from T. & L. he was informed that two of them had, and from these

two the disease had spread over the whole collection. He would direct the attention of the meeting to a remarkable specimen of *Arisema*, a genus closely allied to *Arum*, to the Australian *Cephalotus follicularis*, a very remarkable plant, and more particularly to those curious plants, the *Sarracenias*, of which there were some fine specimens exhibited. They were very difficult to cultivate, the tubes of the leaves going off, and the plants consequently failing to produce their flowers, in which they would notice the curious expansion of the stigma. It had been supposed that these plants were peculiar to the bogs of North Carolina, but they had also been found in Guiana. There were one or two plants at the meeting closely allied to *Aroides*, one *Anthurium Scherzerianum* was very beautiful. He would also call attention to the *Dracenas* and *Imantophyllum miniatum*, from Mr. Bull, the latter being a distinct variety in respect to the size of its truss. There was a very curious sort of *Gladiolus* from Mr. W. Wilson Saunders, and which had formed part of a large collection from the Cape of Good Hope. It was so unlike any *Gladiolus* known, that doubts at first had been entertained whether it was really so or not, but a botanical examination proved it to be so. A *Drymonia* was exhibited. This genus was closely allied to *Gesnera*, and a curious fact had been stated in the "Belgian Horticultural Review," that the pollen of *Gesnera coccinea* would retain its fertilising power for two or three years. This was a fact, which in the hands of cultivators might lead to useful results. In the genus *Salix* he might remark, the pollen actually retained its fertilising power longer than the seeds their vegetative power. Among the other plants pointed out to the meeting, were *Lomaria L'Herminieri*, *Nephrodium molle cristatum*, a graceful plant allied to *Pyrethrum*, and called *Corona de Regna*, the *Elmagnuses* from Japan, *Peperomia*, *Urcolina aurea*, Mr. Veitch's *Lycastes*, raised by Mr. Dominy; the Chinese *Primulas* from Messrs. Windebank & Kingsbury, of Southampton, and in one of the flowers of which nearly all the parts were changed into new flowers; *Brahea dulcis*, a new Palm, and *Lomatia elegantissima*.

Mr. Bateman expressed his satisfaction at Mr. Berkeley's having taken in hand the subject of Orchid diseases, as Mr. Berkeley stood at the head of the cryptogamic police, and there was no doubt that justice would be done on the culprits. Mr. Bateman then called attention to the two *Dendrobiums* which he that day exhibited, as affording a lesson to Orchid growers not to be discouraged by the appearance of the first flowers of newly-introduced Orchids. When *D. luteolum*, which was introduced by Messrs. Low a year or two ago, first bloomed, there were only two weak flowers; those present could see what it was now, it had been in flower six weeks, and had it not been cut it was likely enough to have lasted six more. Almost all our best Orchids when they first flowered appeared hardly worth exhibiting.

The Chairman announced that it was intended to have held a discussion on fruit and floral awards, but so much time had been taken up by the lecture on the subjects before the meeting that the discussion must be deferred to that day fortnight.

Mr. William Paul then delivered a very interesting and excellent lecture on the cultivation of spring flowers, dividing his subject into two heads—hardy spring flowers blooming from February to May, and hothouse spring flowers, or those requiring the protection of glass to bloom at that season. Mr. Paul's lecture closed with some remarks on forcing, and a vote of thanks having been passed to him, the meeting concluded, the Chairman announcing that the next meeting would be held on the 4th of April.

MR. W. PAUL'S SHOW OF SPRING FLOWERS.

THIS is held in a glazed apartment adjoining that devoted to the weekly shows, and a very excellent display there is, consisting of splendid Hyacinths, mostly of the same kinds as those which obtained the first prize at the Regent's Park, besides *Camellias*, *Epacris*, *Rhododendrons*, flowering *Peaches*, *Eriostemons*, *Tulips*, *Narcissus minor*, a very good kind for edging, and cut *Roses*. These subjects are to be replaced from time to time with others, so as to maintain a gay appearance throughout the month, and these who

seek a lesson in spring gardening will do well to inspect the exhibition of one so competent to instruct in the art.

FIRST SPRING SHOW.

This was held on Saturday the 25th, and never since the Society first commenced such shows has there been one so varied, so interesting, and in every respect so well calculated to advance the true interests of horticulture as that which we have now to report. From the Regent's Park Show having so immediately preceded it, that at South Kensington was in some of its features necessarily a repetition, but a repetition under vastly more favourable circumstances; for even the most strenuous advocates of canvas in preference to permanent glazed structures must admit that the latter are infinitely more comfortable for spring exhibitions, especially in such a March as the present.

And now of the Show. Hyacinths, of course, were the principal object; and in the collections from Mr. W. Paul and Messrs. Cutbush among nurserymen, and Mr. Young of Highgate among amateurs, right worthily were they represented. For eighteen Mr. Paul was first with splendid spikes of Von Schiller, Macaulay, Solferino, Koh-i-Noor, Miss Nightingale, all various shades of red; that rich deep-coloured variety brought out last year by the exhibitor—King of the Blues; Garrick, Van Speyk, Charles Dickens, and Grand Lilas, paler shades of blue; Feruck Khan, and Prince Albert, both nearly approaching to black, the latter a very fine spike of its kind; and in blush and whites, Tubiflora, Gigantea, Seraphine, Grandeur à Merveille, and Alba Maxima. Messrs. Cutbush came second; their collection contained two very conspicuous white-eyed, blue-flowering kinds—viz., Lord Palmerston, which, though bearing a certain degree of similarity in its general character to some other kinds, has a rich azure tint entirely its own; and Argus, a better known flower of a deeper hue, and having the white eye even more conspicuous than the preceding. Robert Fortune, another new variety, fully justified the appreciation of it entertained last year, for the spike was fine, and no doubt when older bulbs are obtained will be finer still. Haydn, another of the mauve class, was also fine; and there was an excellent spike of Ida, yellow.

In the Amateur's Class for six kinds, two of each, Mr. Young, gardener to R. Barclay, Esq., Highgate, was first with Mimosa (violet blue), Macaulay, Von Schiller, Van Speyk, Grandeur à Merveille, and Madame Van der Hoop; the second prize was withheld; and Mr. Higgs, gardener to Mrs. Barchard, Putney Heath, was third.

The class for six kinds, was open both to nurserymen and amateurs, and here Messrs. Cutbush took the first prize with Von Schiller, Macaulay, Duke of Wellington, Seraphine, Marie, and Grand Lilas; Mr. Young second; and Mr. Paul third, the whole of the spikes exhibited being good.

Hyacinths grown in windows, in pots or glasses, exhibited no improvement on last year. We have seen many better under similar circumstances. Perhaps after seeing the magnificent spikes grown in pots by Messrs. Paul and Cutbush, people are afraid to come forward. As it was, Mr. Bartlett, Hammersmith, was first, his Queen Victoria, La Dame du Lac, Charles Dickens, and Grandeur à Merveille, being by far the best exhibited; Mr. S. Young, Highgate, was second; and Miss Fortune third, the last having the only exhibition of Hyacinths in glasses.

New Hyacinths from Messrs. Cutbush, who were first, consisted of Thorwaldsen, marbled pale blue, shown last spring; Cuvier, pale blue, with indigo stripe in the centre of each petal; La Française, a large-bellied white variety; Hogarth and Gertrude, rosy pink. Mr. W. Paul's consisted of Princess Mary of Cambridge, pale porcelain blue, with fine spike and bells—a variety of decided merit; Beauty of Waltham, rosy pink, with white eye and compact in spike; Goliath, pink, fine bells; Prince Albert, crimson, with a scarlet tinge on the outside of the tube; and Leviathan, with large white bells, having a slight rosy tinge, and altogether an attractive variety. Doubtless another season when older bulbs shall have been obtained the above varieties will be seen to much greater advantage as regards their size of spike, but judging from them as exhibited Princess Mary of Cambridge, Beauty of Waltham, and Leviathan appeared the most desirable.

Large collections were exhibited both by Mr. Paul and Messrs. Cutbush, and less numerous ones by Mr. Macintosh, of Hammersmith, and Mr. Young. In Mr. Paul's, which was first, we remarked Garibaldi, a fine deep crimson; Queen of the Netherlands, one of the finest of the whites; L'Espoir, primrose yellow; and Duc de Malakoff in its two forms, the one buff, the other distinctly striped with bright rose, and so unlike that one could easily believe them to be distinct varieties. Messrs. Cutbush, who were second, had also a large and excellent collection, but to enumerate all that were fine, or even a few of each colour, would occupy more space than we could afford.

Early Tulips were also shown in great perfection, both in twelves and in collections of upwards of a hundred, by Messrs. Cutbush and Paul, the former being first and the latter second in each case. The best kinds exhibited were White Pottebakker; Roi Pepin, white, flaked with red; Keizerkroon, yellow and red; Archduc d'Autriche, fine crimson and yellow; Proserpine, violet rose; Rose Luisante, Cramoisi Royale, Yellow Prince, Standard Royal, and Vermilion Brilliant. Among double sorts New Yellow Tournesol, Tournesol, and Duke of York, red and white, were the finest. In the Amateurs' Class, Mr. Young, Highgate, was first; Mr. Bartlett, Hammersmith, second; and Mr. Ford, Highgate, third.

Crocuses were exhibited in splendid condition by Mr. W. Paul, who was first; and Messrs. Cutbush second. Mammoth, white, was by far the best of its colour; Prince Albert occupied a similar position as regards blues; Cloth of Silver was the finest striped kind; and Golden Yellow appeared to be the most useful yellow. Good collections also came from Mr. Bartlett and Mr. Young, who were first and second in the Amateurs' Class.

Roses in pots were shown both by Messrs. Paul & Son, and Mr. W. Paul. Among those of the former we remarked fine examples of Maurice Bernardin, Victor Verdier, Le Rhone, Alba Rosea (very pretty in colour), Baron Adolphe de Rothschild, Charles Lefebvre, and Lord Clyde; whilst among Mr. W. Paul's were John Hopper, Prince of Wales, Senateur Vaisse, with several fine blooms, and numerous buds of Anna Alexieff, &c. Several boxes containing excellent blooms of the above and numerous other varieties came from the same exhibitors.

Cut blooms of Camellias were exhibited by Mr. Trussler, gardener to J. Kay, Esq., Hoddesdon, Messrs. Lee, Hammersmith, and Mr. Paul. Among them were several very good examples of the old Double White, Fimbriata, Elegans, Donckelaari, Colvilli, Eclipse, carnation flaked; Jenny Lind, a beautiful blush white; Picturata, &c. First, second, and third prizes were awarded to the above exhibitors in the order in which they are named. Messrs. Lee and Mr. Bull likewise exhibited Camellias in bloom, and received second prizes.

Of miscellaneous collections of flowering plants the best came from Messrs. Lee and Bull. Among the subjects exhibited by the former were *Medinilla magnifica* with five spikes of flowers, *Boronia pinnata*, *Hedera fuchsoides* in good bloom, an *Oncidium*, *Azaleas*, and *Dendrobium nobile*; whilst Mr. Bull contributed *Medinilla*, *Camellias*, *Azaleas*, *Dracanas*, *Imantophyllum*, and several of the plants which had been exhibited at the Floral Committee meeting of the preceding Tuesday, also the curious *Marcgravia rotundifolia*.

Miscellaneous subjects consisted of a splendid collection of Cyclamens from Messrs. E. G. Henderson; Lilies of the Valley from Mr. Paul and Mr. Bartlett; Narcissus from Messrs. Cutbush; six plants of tree Mignonette trained on wire and in good bloom, from Mr. Higgs, gardener to Mrs. Barchard; *Rhododendron* Countess of Haddington from Mr. Parker; *Azaleas* and *Primulas* from Mr. Todman; the splendid new *Azalea Stella* (orange scarlet and violet) in fine bloom from Mr. Veitch; a neatly-filled plant case from Mr. Bull; Horse Chestnuts rooted in glasses from Miss Lane; bouquets and baskets of spring flowers from Mr. Lucking and Mr. Greeves; and ornamental flower-pots, baskets, &c., in Etruscan ware from Messrs. Hooper & Co.

From Mr. Hannan, gardener to J. Crawshaw, Esq., Cyfarthfa Castle, came two good Pines; from Mr. Shuter, gardener to the Earl of Wilton, Heaton Park, Manchester, bunches of Lady Downe's Grape ripe in October last; and

from Mr. Miller, Coombe Abbey, the same variety ripe in August last, and in both instances the Grapes were in excellent condition—another proof how valuable this variety is for late-keeping. Mr. Miller sent in addition a dish of Dwarf Kidney Beans.

The greatest curiosities, however, were the two plants of the common *Aucuba* in fruit from Mr. Laing which were noticed last week, and a fruit of *Ficus Cooperi* ripened in the Society's garden at Chiswick and very ornamental in appearance, being red mottled and speckled with yellowish white, but whether it is edible or not has not as yet been ascertained.

CHEAP CONSERVATORY DECORATION IN WINTER.

THE subject of flowers for the winter decoration of the conservatory having been lately brought forward in your columns, and as it is one well worth following up, I will with your permission briefly state what I generally find the best for the purpose, and I hope to see many more come forward and do the same.

Presuming that the *Chrysanthemums* have lasted till the beginning of December, I generally grow a good quantity of *Primulas* in 32-sized pots, and with a little pushing they always come in about that time, and last a long while; also a good batch of early *Camellias*, *Deutzia gracilis*, which I consider to be first-rate, and a nice sprinkling of *Epacris*; so that with *Primulas* for pink or rose colour, *Camellias* for scarlet and white, *Deutzias* with their beautiful feathery blooms, and the various shades of *Epacris*, I generally manage to have flowers till after Christmas.

For January I always depend upon early-sown *Cinerarias*, close-potted, and kept near the glass, forced bulbs, of sorts, and *Crocuses* in particular, also *Mignonette*, forced *Azaleas*, *Epiphyllums*, of sorts; *Polygalas*, in small pots; *Primula nivalis*, *Correas*, of sorts, *Begonia fuchsoides*, in small pots, and hardened-off gradually; forced *Roses*, *Acacias*, and *Cytisuses*, early-flowering *Heaths*, *Aotus gracilis*, *Lobelia Paxtoniana*, first-rate, and small plants of the various bedding *Geraniums*, forced *Rhododendrons*, *Calceolarias*, *Salvia patens* and *fulgens*. These with a few stove plants sparingly introduced form the supply for flowers till the end of February, after which time there is no lack of material to choose from; and for foliage I have *Araucarias*, of sorts, *Camellias*, and *Oranges*, with the various *Retinosporas*.—BURNTWOOD, P. D.

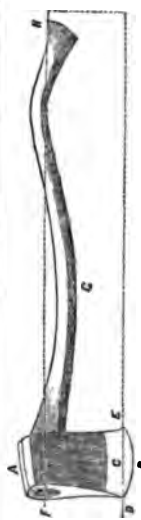
THE ART OF CHOPPING.

CHOPPING is an art, and one that is not to be acquired in a day. Those who have handled the axe from earliest childhood, and become familiar with its management, have little idea of the awkwardness felt by those who make their first attempt at chopping, after having arrived at mature years. However, with a little perseverance, the art may soon be acquired by parties who have been accustomed to handle tools of a very different description. There is, however, a great difference in the facility and effectiveness with which people handle the axe. One man will chop much faster and more neatly than another. Nor is it merely a question of muscular strength. Skill has far more to do with it. A small man, possessing apparently but little strength, will often chop twice as much as a burly, powerful fellow, who "hasn't got the hang of it," as backwood-men would say. It is difficult to prescribe rules for handling the axe properly. An easy swing obtained by straightening the back at every stroke, and throwing the axe well up into the air; a straight aim; firm grasp of the handle hilt in one hand, and quick, free motion with the other; perfect elasticity in the arms; and the avoidance of all stiff, rigid movements;—these are the chief requirements. But, after all, there is a certain knack which only intuitive perception and intelligent practice can give. We are not sure but the true chopper, like the true poet, is "born, not made."

Much labour is avoided by making a careful examination of the ground and timber before beginning, and especially ascertaining the direction of the prevailing winds in spring

and summer. This will sometimes be indicated by a slight lean on the part of the trees, and more distinctly, perhaps, by the inclination of the tops. In commencing a piece of chopping, the largest and most unmanageable tree should be felled first, and if the prevailing wind be from north-west, the tree should, if possible, be made to fall towards the south-east. Then by carefully cutting the rest of the trees within reach of this first tree they will all fall with their tops on the first tree felled, the trunks forming various angles with that of the first tree chopped down. As each tree is felled, the branches should be all cut off so as to form a compact mass. Where the timber is thick these heaps will be nearly, if not quite, close enough to walk over through the entire extent of the fallow. When a tree is bent so as to fall the wrong way, it will often reach another row, or if the inclination be not too decisive its course may be directed by the use of a "spring pole," as it is called. This is a light, tough pole, about 25 feet long, with a strong sharp spike in the small end, protected from splitting by a ferule. When used, it is placed on the side of the tree opposite to that towards which the tree should fall, the spike thrust into the tree about 20 feet from the ground, and the bottom end jerked toward the stump of the tree. A small rope may be attached about half way up the pole and fastened round the stump below the place where it is being cut off. By doing this tightly, the pole will bend, and all its elasticity be made to contribute toward forcing the tree to fall in the desired direction. The use of the "spring-pole" requires much judgment and caution. A tree will usually fall on that side of the stump which is cut the lowest. If it be desired to throw a tree in a given direction, let it be first cut on that side 3 or 4 inches lower down than on the other side, and it will surely fall as intended, unless the wind is contrary, or the tree leans. These circumstances must always be taken into account at the outset to prevent mistakes and avoid accident. The direction in which the chips fly and the line they form as they lie on the ground will indicate where the tree will fall. Care must be taken and judgment exercised in felling trees to prevent mishaps. Accidents occur through ignorance or carelessness, and there are few cases in which injury is done by the falling of branches, or the tree going in the wrong direction, that the chopper is not to blame. Many act very recklessly, especially when the tree gets lodged in an adjacent tree. In such a case great caution should be used, no risks run, and no hasty measure attempted. Better take a little more time than hazard life or limb.

Before closing these remarks about chopping, it may be useful to say something about the axe, and the mode of "hanging" it, as it is called. The annexed figure represents an axe ready for use:—A is the poll, which is often made of steel; B is the edge; C the steel; D the outside corner; E the inside corner; F the eye through which the helve or handle passes, and into which it is wedged; G is the helve or handle. H is the hilt of the helve or handle. The dotted lines represent the angle of the axe and helve, and show how the axe should be hung. Axes are made of different sizes and weights, choppers are not agreed as to whether a light or heavy axe is the more effective. Perhaps it depends somewhat on the workman. A slow chopper can use to advantage a heavier axe than a man who is quick in his movements, while the latter will make up in the number of his blows for the lightness of the tool he works with. A good helve or handle is very necessary in order to be pleasant and effective for work. In many cases it so happens that the chopper must make his own helve. This is not an easy task. Many a good mechanic cannot make a helve fit to chop with. Our space will but admit of a suggestion or two in reference to this point. In the first place,



the helve must be flat or rather oval, as a round helve will turn in the hand, and is neither pleasant nor safe to work with. The shape will be better understood by the help of

following diagram, which will also be a guide in making helve:—About 3 feet 8 inches in length from *a* to *b* will suit most men. It is well, if it can be done, to take a good helve as a model, but if this cannot be done, a pattern can be made in a few minutes out of a thin piece of board, as shown by the dotted lines. At *a* it should be about 3 inches wide, and at *b* about 2½ inches wide. At *c* about 6 inches from the end near *a*, make a mark for the most prominent point. At *D* make another mark about two-thirds of the distance from *a* to *b*. At *E* make another mark 6 or 7 inches from *b*. The shape should be marked out with a pencil, as nearly like the figure as possible, and then it should be cut out very carefully and exactly. Tough hickory is the best wood for a helve. Rive out a piece and dress it four square, as thick at the large end as the hilt, and wide enough to mark the shape with a pencil by the pattern. Then with such tools as may be at command, reduce it to proper shape and dimensions. Drawing-knife, smoothing-plane, spoke-shave, rasp, and sand-paper, are most convenient, but sometimes all these are not within reach. In laying the pattern on the stick let the part at *c* & *E* be towards the bark, and the part at *D* towards the heart of the tree. Then if the helve springs no mischief will be done, but rather good, if it springs sideways it will be worthless for chopping uses. In hanging the axe, as it is termed—i.e., putting handle in, it is necessary to have the edge range tly with the centre of the hilt, and also to have the the centre of the eye, and the centre of the blade, at t angles.—(Canada Farmer.)

OXALIS CORNICULATA RUBRA.

I am indebted to my friend, Mr. Thomson, of Archerfield lens, N.B., for a stock of this beautiful miniature Oxalis, from what I have seen of the plant in question, I am id to corroborate his statements in its favour; it will me a general favourite with the ladies, if not I shall be tly deceived. For edging purposes in narrow borders all beds, there is no plant of its colour so admirably ted. It is compact in habit, rarely exceeding from 4 to hes high, with foliage resembling the finest tinted Beet, surpassing the Perilla in my estimation. In its younger ths it resembles the Amaranthus melancholicus ruber, as it advances the foliage assuming a darker tint. It es freely at any season, as freely as Verbena, and will e the same winter treatment, or it may be raised from , but it is rather a difficult matter to secure seed, owing e extreme irritability of the seed-vessels characteristic is class of plants. If it is desirable to save seed plant on a large sheet of clean paper, and allow the vessels to burst unaided, when the seed can be collected sown at once. I have raised some hundreds of seedlings winter, which will make good plants by May. I do not cate this mode of propagation where there is a good t on hand; but with a scarce plant we are all anxious gh to make the most of it. This will prove a most il plant in the north of Ireland, rain not affecting it in- usly in the least, but rather the contrary, and after a watering it looks all the more brilliant. To those who t possess it, I say, Secure it as soon as possible.—JOHN NGTON, Wrotham Park, Barnet.

GLASS EXCESSIVELY BRITTLE.

CANNOT but think much of the sheet glass now used is rfectly annealed, or otherwise badly manufactured. It e expected that a certain amount of breakage will e during frost, particularly if the laps of the panes are rge, because a drop of water when frozen must occupy e space than when in a liquid form. But I have ob- ed panes of glass crack gradually from edge to edge of ge square when the temperature varied considerably, though no ice was formed. Many persons with whom

I have conversed on the subject seem at a loss to account for much of the breakage which occurs in their glass-houses, and I think it well to call attention to the subject. Perhaps some of your numerous readers who are competent to give an opinion, may be induced to give us information.

I know one large builder who has lately changed his market for glass, from an idea that what he has purchased breaks more than he expected. The glass in question is made at one of the largest manufactories in the country, and the first feeling of dissatisfaction was produced by its excessive hardness, rendering it difficult to cut, and spoiling so many of the men's diamonds. It appears to me a very important question, because if the reason of glass breaking is because it is not well annealed after being manufactured, it is clear that extra strength will give no guarantee against loss by breakage.—J. R. PEARSON, Chilwell.

MESSRS. CUTBUSH & SON'S HYACINTH SHOW.

THIS commenced on Tuesday last, and will continue open till the 1st of next month, affording a rare treat to the lovers of flowers. With Messrs. Cutbush the Hyacinth is an object of special attention, and the reputation which they have acquired in connection with its culture, is sufficient guarantee that the display which they annually and freely offer to the public, is of no ordinary degree of merit; and this season the show is fully equal, if not superior, to those of former years.

In the red class of Hyacinths, there were some noble spikes of Von Schiller, Macaulay, and Florence Nightingale, whilst Queen of Hyacinths, and Solfaterre, were very brilliant in colour; La Prophète, Princess Clothilde, and Mrs. Beecher Stowe, were also fine. In double varieties of the same colour, Duke of Wellington, very pale rose, was the most attractive, while for a deeper shade there were Susannah Maria, and Koh-i-Noor. In blues, Lord Palmerston was, of course, one of the most beautiful, whilst Thorwaldsen is another variety of first-class merit, having very large marbled blue bells. Grand Lilas, Couronne de Celle, Bleu Aimable, Marie, and Van Speyk and Garrick, double, may be added as sorts of well-established merit. Argus, too, is pleasing as a white-eyed kind. In mauve, with the exception of Robert Fortune, which made its appearance last year, Haydn is the best. In whites, Queen of the Netherlands, and Madame Van der Hoop, were very fine, also Sir Bulwer Lytton, a novel double variety, with large bells of great substance, and in colour white, with a tinge of pale rose. Alba Maxima, Mont Blanc, Grandeur à Merveille, and Gigantea, white; Ida, and Duc de Malakoff, yellow; General Havelock, and many other varieties, were also worthily represented. The only novelty not before seen was Hogarth, a soft pink, which promises to be a desirable kind. As usual the back of the house was filled with Fairy Roses, Cytisus, Azaleas, Heaths, Pelargoniums, Camellias, and other flowering plants, whilst the early Tulips added not a little to the general effect.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Artichokes, the spring dressing to be given to them by digging and levelling the ground between the plants. All suckers to be reduced to three on each stock, and if a new plantation is made, the suckers to be planted three in a patch, 3 feet from patch to patch, and 4½ feet from row to row. Asparagus, the general spring dressing, if not yet done, should no longer be delayed, as the roots will now begin to grow. Broccoli, a little early Purple and early White may be sown for autumn use; but Cape and Grange's almost supersede the use of any other sorts for that season. Brussels Sprouts, make a sowing if not already done. Cauliflowers, earth-up the early-planted as soon as it can be done, so as to prevent the wind blowing them about and loosening them. Cucumbers, take advantage of a fine day to draw the earth round the hills after it has lain a day or two by the side of the frame to become warm. Do not press it down round the plant. As soon as the heat begins to fail, fork-up and add to the lining, or if the heat is entirely gone, renew the

lining. After a continuance of dull weather, the plants are apt to flag for the first few clear days, when this is observed they may be slightly shaded. *Herbs*, should now be propagated, seeds being sown of the annual sorts and such as do not supply cuttings or admit of being divided. *Potatoes*, put in the main crops where the ground is in good working order. Plant in trenches in preference to dibbling the sets in. *Salading*, keep up a succession by sowing once a-week. Young Radishes may be drawn from the frames where they are too thick. *Spinach*, sow a few rows for succession, limiting the supply to the demand. *Tomatoes*, pot them as they require it, so as to have well-established plants by the time the weather will permit of their being turned out, for if very small at that time, they seldom ripen their fruit well before frost sets in.

FRUIT GARDEN.

To obtain good early *Grapes* from Vines on the open walls, all that is necessary is established Vines, a common hotbed frame or two having three or four lights, a load or two of dung and leaves, and a few slates or plain tiles. If the Vines are pruned, which they should have been before this time, make a bed of leaves and dung of the size of the frame about 4 or 5 feet high, and 2 feet from the wall. Use the short dung at the top, and put on the frame immediately. After the heat is up, fork it up a little once or twice, and if it becomes dry water it slightly. After the violent heat has somewhat subsided, cut notches in the backs of the frames and bring down the branches of the Vines. A trellis should then be fixed inside at about 6 inches from the glass, to which the Vines must be tied. When this is completed close the frame, and let it so remain unless the bed is very hot, when a little air must be given until the buds begin to push, after which they must have air according to the state of the weather. When the buds are about breaking, the dung should be covered with slates or tiles to keep down excess of heat and steam. When it is necessary to thin the *Grapes*, the lights may be drawn off, as also for stopping and thinning.

FLOWER GARDEN.

Those who force Neapolitan Violets should for the next three weeks or a month propagate a stock, either by means of cuttings or runners. Look well to recently transplanted trees and shrubs, especially such as may have been shaken or partially uprooted by the recent high winds. When the weather shall have become warmer, a sprinkling overhead with the engine on the evenings of dry days will be of service to large evergreens. Seeds of perennials and biennials to be sown, such as Wallflowers, Sweet Williams, Polyanthus, Canterbury Bells, Pinks, Carnations, and Picotees for flowering next year; Heartsease, Antirrhinums, and Sweet Scabious sown now will flower in the autumn. When the flower-stems of Auriculas are rising an abundance of air should be supplied by drawing off the lights every fine day, and replacing them at night, covering during frosts with mats or straw. It is necessary to be cautious not to expose the plants too hastily to the sun in a morning after frost, but to allow every appearance of it to vanish before they are uncovered. Sow choice Ranunculus seed in shallow pans or boxes, cover the seeds as lightly as possible, and place the pans in a cool frame.

GREENHOUSE AND CONSERVATORY.

The application of fresh soil and humidity will, in many cases, be required to supply the necessities of growing plants. Greenhouse plants for the most part require a considerable amount of pot-room, as many of them, particularly the soft-wooded sorts, are free growers; but the tender or more weakly-growing kinds must be shifted with caution to avoid overpotting. When repotting plants it is generally recommended to use the soil in a rough state—that is, not sifted, but made fine by rubbing it through the hands, picking out the small stones, &c., and also to use plenty of drainage. If plants were to be treated on the one-shift system—that is, removing them at once from a small to a very large pot, such drainage would be necessary to keep the mass of soil in a dry and healthy state; for it would otherwise become sodden after waterings before the roots had made much progress; but according to the general practice of shifting to the next larger size of pot so much drainage with a porous soil is unnecessary at this season—at the approach of warm weather it is a disadvantage, because with such free drain-

age and a rough porous soil the watering-pot must be in frequent use, and almost at the same time that the water is applied to the top of the pot it is seen or heard to pour out at the bottom. When plants are shifted in the autumn a porous soil is then more necessary to keep the roots in a dry healthy state during the many dull, damp, and dreary weeks of winter, but now so much porosity is not necessary, and, therefore, it should be considered and acted upon during the spring and summer potting of plants. If specimen plants are in good health, and the pots well filled with roots, they will grow and flourish all the better if they now receive a liberal shift, and be kept rather close and moist for a short time until they make fresh roots, when they may be more freely exposed to sun and air. It is necessary to be very careful not to give too much water to recently-potted plants as it is frequently the cause of their death. Fuchsias should now be making free growth in the warmest part of the greenhouse; to be syringed overhead every fine afternoon, stopped if long-jointed to form compact bushy plants, but if intended to be planted along the sides of walks or as single specimens on grass, they should be grown with one main stem, from which the branches will spring all round and form fine pyramidal specimens for pleasure-ground scenery. Attention to be paid to cleanliness in every particular by removing dead and decaying leaves, keeping a sharp look-out to destroy green fly and mildew.

PITS AND FRAMES.

It will be necessary to keep up a kindly heat in the cutting-frames, to top all cuttings that have taken root and are beginning to grow. The autumn-struck cuttings that were potted off last month to be removed to a cold frame or pit, and protected from frost.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

HERE little was done out of doors, owing to the frost, which ranged from 6° to 16° below freezing on the three first days of the week. A good opportunity was presented for trenching for *Sea-kale* and *Asparagus*. Notwithstanding the coldness of the weather, *Asparagus*, *Sea-kale*, &c., in the open ground, are moving nicely, and the long tubular roots are becoming covered with fresh spongioles. If an opportunity offers, we may be inclined to plant a piece of *Asparagus* before the shoots appear above ground, though in general we prefer planting when the tops are from 1 to 2 inches in length. However, this does not much matter if the roots are carefully taken up, kept moist, and shaded, so as not to hurt the young spongioles by exposure. On this account plantations generally do better when the roots are merely taken from one part of the garden to another. When the plants are sent any distance it will be found better to have them taken up just as the roots begin to move, and before the tops show at all above ground. Removed a lot of *Sea-kale* from Mushroom-house into a sheltered shed, where it can be hardened off gradually before planting again in the open air. If this is not done it is advisable to place some protection over the heads when planted out at once. It is always wise to avoid any sudden check if possible. The same plants of *Sea-kale* may thus be grown and forced even when taken up a long time; but it is as well to give them the ensuing and the second summer's growth before taking them up. The crown ends will, however, do very well the next winter, but pieces of the root, all of which will grow, like two summers' growth. This taking up, and placing the roots thickly in any dark warm place, is the cleanest and most economical mode for having this delicate vegetable early in winter. Such forced plants, as stated above, should be well hardened off before planting them out again; and they should not be cropped too hard—not more than two cuttings on the average. We have sometimes taken three and four cuttings; but in that case, do as you will, the old roots are of but little use, as all the strength is taken out of them. *Rhubarb* stools, forced and hardened off, may also be divided and planted in the same way. They will just grow slower at first than old plants in the ground, taken up and divided. Now is a good time for that operation, as the buds can now be well seen, and old stools may be divided into pieces having two or three buds

Forced roots, that have been taken up for the Mushroom-house, when divided and planted in deep rich soil, really beat seedlings, however carefully they are treated. Ragus, Sea-kale, and Rhubarb should now be sown. There is plenty of these for winter, a good security is needed for a well-served table. Gave the general routine attention to other vegetables. It is to be hoped that the rain and hail will bring warmer weather, as these severe and easterly and northerly winds are not only keeping us back in the garden, which may be a great advantage, but are keeping the pastures from moving, a serious matter to all possessing flocks and herds, especially scarce of corn and fodder.

FRUIT GARDEN.

Fortunately the cold winds kept the buds of fruit trees backward that we hope they will suffer but little from the frosts. On Monday morning fixed a number of extra twigs among the shoots of Apricots and Peaches, but the orchard-houses at night, as we are anxious to the trees from opening their bloom until as late as possible, without shading them. Even when the thermometer fell to 18° below freezing point it scarcely affected orchard-houses; but then they had been shut up early in the afternoon, enclosing a good amount of sunshine, or that we should have found it necessary to have protected the pot plants, as Peaches, Strawberries, &c. It was, however, so far fortunate that there were bright days along with cold nights. The very brightness of Monday, the 20th, after the leaden cold sky of Sunday, and coming such a severe frost, with an excessively cold temperature in the shade, rendered firing and air-giving a matter of importance. The safest plan, in all such cases, is to heat a medium cool as long as the sun shines, and give only a minimum of air, and that, in ordinary structure, at the highest point of the roof. A strong artificial fire in such days is not merely waste, but the dry parched atmosphere must necessarily be admitted robs tender plants of vital juices without mercy, and sickness and inroads on the buds are the general consequence. Even damping and rot, under such circumstances, are better than introducing great draughts of cold air among tender plants, or made tender by forcing. It is of importance so to things under glass hardy, that they may stand the force of the sun without flinching; but plants that will do general well often be distressed when the sun shines brightly for a day after several days of great dullness. In shading and a moist atmosphere, then, will just suit the plants to accommodate themselves to the changed circumstances. The bright sun, though so desirable in all, must, in such circumstances, be regulated, and air, though also desirable, does not necessitate the giving a northern icy blast among tender plants. Budded Peaches, arranged Vines, potted Melons, moved berries to the best places at command, and set out regulated the second orchard-house, appropriating the part of the lean-to house to three rows of trees in pots, as that longer time may be obtained for forming a definite decision as to planting, &c. Last season they did well, and would have done better, could we have decided enough. That, in fact, is one of the chief objections to growing fruit trees in pots. We hope, however, this season we shall not be annoyed by such scarcity of buds as during the last season. Strawberries are now growing better; but we have had more blind pots than usual, and we are thankful to say that ours are not nearly so many as those of our correspondents. We refer to the percentage of failures than usual, to our shortness of last summer and autumn, and being obliged as a resource to use liquids in anything but a fit condition. Four readers told us the other day, that of his nice-looking Strawberry-pots four-fifths had failed. That is a very great drawback. Last season ought to have us first-rate fruitful plants, but it is just possible that little neglect in watering under such sun and heat have starved the fruit-bud even when the plant could look well. We found our own plants much smaller than usual, owing to our drought, split themselves up into buds or crowns, which we never like, as we always want one strong, well-ripened, single bud. Our correspondents have also desired us to say, that

presuming a Strawberry-house is more desirable than shelves put up anywhere and everywhere, what is the kind of house we would recommend? and to this we reply, that without saying a word against the plans and houses for Strawberry growing lately given by our conditor, Mr. Abbey, were we to have the pleasure of building a Strawberry-house, we would closely follow the section lately given of the Strawberry-house at Enville. The practical man knows that such a house need never be a single hour unoccupied in any day of the year.

ORNAMENTAL DEPARTMENT.

Out of doors the work has chiefly been turning over flower-beds, rolling the lawn, and pruning shrubs when the weather would permit. The frost has rendered a little protection necessary to Tulips, Hyacinths, and even Pinks and Carnations newly planted. Fortunately the ground was dry, or some things would have suffered much from the cold. Annual seeds but for that would have suffered if sown early. The period of germination just when the little stem and roots protrude is the most trying, and hence it is that self-sown seeds generally suffer less from changes of weather than those artificially sown. Natural instinct, as it were, tells them the best time for bursting their shell. We have known beds of Mignonette sown in March, that never produced a plant, whilst seeds self-sown in autumn from plants from which the seeds were gathered, after being exposed to all the changes of winter, produced a thicket of plants in May, when left entirely to themselves. Even in the case of hardy annuals, those sown in autumn often do better than those sown very early in spring. In general, April is soon enough, when a regular crop of plants is desired.

Hyacinths Forced.—There are very general complaints of these not coming up to the mark this season. Various reasons have been assigned—the late frosts of last spring, or rather early summer—the taking the bulbs out of the ground earlier than usual as respects the season of the year—and, owing to the demand for bulbs being greater than the growers could supply, sending bulbs into the market with fewer years' growth given to them than usual. Our opinion is that there may be something in all these causes united. What with spring flower gardening, and the winter and spring supply of flowering bulbs, the regular growers in the Low Countries find it hardly possible to get land enough for their purpose. One of our eminent nurserymen told us lately that within two or three years his trade in bulbs had increased fivefold, and that if he pushed it at all he could sell many more could he fully satisfy himself as to the quality. Even this season some of the seemingly finest, hardest, plumpest, well-ripened bulbs turned out with him rather inferior. With all this, however, we think it right to state that amateurs and small purchasers do expect more from their bulbs than is quite reasonable. If you purchase a dozen plants of one variety from a nurseryman, there will often be variations among them as to growth and habit for which it would be difficult to give a reason. This is especially likely to be the case with bulbs. A very little difference in the age, in the growth and the ripening of the previous season, will tell on the strength and beauty of the flower-stems when forced the following spring. Often the proprietors of nice villa gardens are apt to become dissatisfied, and perhaps blame the gardener, when, do what he will, of their dozen or score of Hyacinths each one does not come up to their expectations. They go to a spring show, and they cannot conceive how their dozen of bulbs should not be pretty well as good as any dozen exhibited at Regent's Park and Kensington by such good growers as Messrs. Paul, Cutbush, &c. They forget that these great growers make bulb culture a speciality, whilst bulbs form a small item in the things demanding their gardener's attention. Besides, we are quite sure that they would oftener be satisfied rather than dissatisfied with the number of really good flowers they obtain from a small collection, if they knew that the best growers, with all their acquaintance with the best kinds, and giving them the very best treatment, fail to bring every bulb equally good. A gentleman lately grumbled that, after giving an order for eighteen of the best Hyacinths, intending to compete in a class of twelves, he found it was no use trying for anything but sixes, and, to make sure of being first, he must be content with threes. Well, if he took honours in sixes, and in the face of good

competition, we think he had reason for congratulation. He had an idea that the great growers selected their twenty best from some thirty or forty bulbs. We think it much more likely that they had some hundreds to pick and choose among. The best cultivators would be the first to confess this. But these matters, though they may apply to strict florists, the flower-stems which they would reject would be none the less beautiful to those who see beauty, though not arrayed in defined forms and shapes. To all such, a vast variety of showy bloom may be obtained from the cheaper collections of Hyacinths. What we wish clearly to enunciate is just this—that all who wish to have a certain number of first-rate flowers for any occasion must grow more than they absolutely want for that purpose, so as to have numbers to choose from.

We continued potting, striking cuttings, &c., during the week, and felt thankful that we had not yet turned anything out into earth-pits for the flower garden, though most of our houses are now unpassable for gentlemen, and far less for ladies. We shall leave these just to say one word on

Heating Small Houses.—We can add nothing to what was said in answer to two correspondents a fortnight ago, as to stoves, gas, &c. We believe that for every small house close to a residence that now exists, there would be twenty, if it were not for the heating question. We believe that all the modes referred to will be effectual if the little trouble is given, and that gas where easily obtainable would give the least trouble, whether used for stove or for stove and their boiler and their pipes. We have had several letters on the subject, asking our opinion on this and that plan, but we would rather not give more of opinion and belief, but prefer instead to listen to the practical results of those who have tried the different modes, as we are not in a position to test them ourselves. What makes us the more anxious is, that the reports received are very contradictory, especially as to the expense of the modes of heating. We have taken the opportunity to consult a friend, who from his position, and courtesy, and popularity, has been greatly consulted on such matters, by residents in the suburbs of large towns, and he tells us that the reports he receives are very conflicting, one gentleman stating that the heating of his little house with gas has made no appreciable difference in his gas bill for the year; a second stating that the expense for his small house averages 1s. per week; whilst a third says, that the expense in his case is ruinous, averaging 10s. per week. Of course, this must have been a larger house. These conflicting results led our friend to advise a course with these little ornamental houses, which we mention as it may suit some, and which has been followed by many of those who asked his counsel, and that is simply to treat such houses as a cold or unheated house. To do this and also keep up the interest of the proprietors in their own plants for the summer, he advises growing the hardier plants in summer, as Fuchsias, Scarlet Geraniums, Salvias, &c., and as winter approaches, pruning these partly at least, and placing them under the stage, with the means of covering the stage over in severe weather, and then bringing in winter-flowering Jasmines, Laurustinus, Arbutus, and other shrubs, and early bulbs to enliven the house for the winter.—R. F.

TRADE CATALOGUES RECEIVED.

Charles Turner, Royal Nurseries, Slough, and Salt Hill.—*General Spring Catalogue for 1886.*

Joseph Wood, Florist, Bowness, Windermere.—*Priced Catalogue of British Ferns.*

COVENT GARDEN MARKET.—MARCH 25.

Out-door vegetables continue scarce. Forced vegetables and continental supplies have also declined.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	3	0	4	0	Mulberries....	punnet	0	0	0
Apricots.....	dox.	0	0	0	Nectarines.....	dox.	0	0	0
Cherries.....	lb.	0	0	0	Oranges.....	100	5	0	0
Chestnuts.....	bush.	14	0	20	Peaches.....	dox.	0	0	0
Filberts.....	100 lbs.	40	0	0	Pears (Kitchen)...	bush.	8	0	12
Cobs.....	do.	50	0	60	dessert.....	dox.	3	0	10
Gooseberries...	3	0	0	0	Pine Apples.....	lb.	18	0	14
Grapes.....	lb.	15	0	30	Plums.....	3	0	0	0
Lemons.....	100	5	0	10	Strawberries...	dox.	2	0	4
Walnuts.....	each	0	0	0	Walnuts.....	bush.	14	0	20

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.	
Artichokes.....	each	0	4	0	6	Leeks.....	bunch	0	3	0
Asparagus.....	bundle	8	0	14	0	Lettuce.....	doz.	2	0	0
Beans Broad.....	1 sieve	0	0	0	0	Mushrooms.....	pottle	1	6	2
Kidney.....	100	2	6	4	0	Musd. & Cress, punnet	0	2	0	0
Beet, Red.....	doz.	1	0	3	0	Onions.....	bushel	5	0	7
Broccoli.....	bundle	3	0	3	0	pickling.....	quart	0	6	0
Brussels Sprouts	1/2 sieve	3	0	4	0	Parsley.....	1/2 sieve	3	6	5
Cabbage.....	doz.	1	6	2	0	Parsnips.....	doz.	0	9	1
Capisoums.....	100	0	0	0	0	Peas.....	quart	0	0	0
Carrots.....	bunch	0	7	0	10	Potatoes.....	bushel	3	6	4
Cauliflower.....	doz.	2	0	6	0	Radiishes doz.	bunches	1	0	2
Celery.....	bundle	2	0	3	0	Rhubarb.....	bundle	1	0	1
Cucumbers.....	each	1	0	5	0	Savays.....	doz.	3	0	0
Endive.....	score	2	6	3	0	Sea-kale.....	basket	1	6	3
Fennel.....	bunch	0	3	0	0	Spinach.....	sieve	4	0	6
Garlic and Shallots, lb.	0	8	0	0	0	Tomatoes.....	1/2 sieve	0	0	0
Herbs.....	bunch	0	3	0	0	Turnips.....	bunch	0	5	0
Horseradish.....	bundle	2	6	4	0	Vegetable Marrows	doz.	0	0	0

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

PUNNETS.—"A. B." wishes to be informed where he can purchase some punnets.

FLOWER-GARDEN PLAN (*Calcaria*).—Your copy of the plan at Putteridge bury of a group of beds on the east side of the mansion shows the centre bed larger than that in proportion to the other beds, and even that is too large for the other clumps, but is neutralised in the planting. You would require a good broad band of Lobelia round the Calceolaria Aurea floribunda to prevent the yellow drowning the other beds. We think the group would be improved and be better balanced if you put three colours in the bed—say Victory or Crimson King in the centre, and then yellow and blue. In the arrangement of the other eight beds you sometimes balance or pair the beds, and at other times there is the plan of having every bed distinct—now one or other should be followed. We prefer balancing. Instead, therefore, of having 2, 3, 4, 5, filled with Madame Vaucher, Stella, Christine, and Tretham Rose Geraniums respectively, we would make 3 and 5 Stella, edged with Christine, and 4, 5, Tretham Rose, edged with Madame Vaucher; then we would have 6, 7, Scarlet Verbenas, edged with variegated Arabis, as you propose, but in 8 and 9, instead of having one cross bed of Purple King, and another of Snowflake, we would centre both with Snowflake and border with Purple King. In your long bent bed we would take the border all round of Cerastium on both sides, then your Lobelia, and centre with Golden Fleece. The bed would look very pretty after edging with Cerastium to dot with Golden Fleece, or Cloth of Gold, or Golden Chain—the latter two better than Golden Fleece—and then fill all the other spaces with Lobelia.

INDIAN CORN (*A. Z.*).—You were answered at page 133. It will not succeed.

VINE LEAVES WARTED (*H. H.*).—The little elevations with brown tips on the under side of the Vine leaves usually arise from the roots supplying sap to the leaves faster than these can elaborate it. Free ventilation and less moisture in the air will check this appearance, but it is not at all incompatible with a superior crop of fruit, being indicative of vigorous growth.

GROWING THIN MUSHROOMS (*S. G.*).—To get thin Mushrooms you must keep them drier and use lighter and less rich materials to grow them in. Most people like them thick and juicy, but Mr. Fish has several times stated that by using a covering of cow dung beneath the soil they become too thick for some people's taste. For some purposes such thick Mushrooms might be sliced across. Most people like them the better for being thick and juicy, but a gardener should study the tastes of his employer.

A THREE-TERRACE CIRCULAR BED (*A. N.*).—We would plant the top with Stella Geranium, the second with yellow Calceolaria, and the ground tier with scarlet Geraniums Tom Thumb, or Little David, or Boule de Fee, and edge with a hanging border over the stakes of the white-leaved Geranium. A very good arrangement would also be white-leaved Geraniums for the top, with the flowers taken off, second tier scarlet Geranium, bottom tier Aurea floribunda Calceolaria, with a hanging edging of Verbena palestina.

FORCED STRAWBERRIES UNFRUITFUL (*W. A. O.*).—If you wish the Strawberry plants that have failed, to fruit in the same pots next year, we recommend you to protect the pots when you set them out of the house. Then place them against a north wall to have comparative rest, and about the middle of June thin out the smallest buds, shake away a good portion of the soil, and repot firmly again in fresh soil; shade for a week or so in bright sunshine, and then expose carefully to the sun, and treat as if younger plants. You will then most likely obtain a heavy crop, but in general the individual fruits are not so fine as from younger plants.

PUTTERIDGE BURY (*A. Reader*).—We are sorry that as yet no definite information can be given as to the matter to which you refer. If no notice appears perhaps it would be as well to write to Mr. Fish during the summer, when, no doubt, he would act with his usual courtesy.

NEGLECTED FRUIT TREES (J. C. L.).—It is not too late for pruning in your locality if you do so at once. The hedges, if not evergreen, may be cut. Hollies and other evergreen hedges, shortened in with the knife late in next month.

CLIMBER AND TRAILING ANNUALS FOR WINDOW (R. Dartford).—*Thunbergia alata* and *T. alata alba* are showy plants, requiring to be raised in a gentle hotbed; *Tropaeolum Lobbianum* Caroline Schmidt, with deep scarlet flowers, would also answer; *Tropaeolum Brilliant* is also good; *Gypsophila muralis*, pink; *Sanvitalia procumbens*, yellow and brown; and *Saponaria calabrica*, pink, are trailing plants of compact growth. For such a situation as inside your south window we would not recommend the above, but have *Mandragora Barclayana* and its white variety, one or both of the *Thunbergias*, for the climbers; and *Convolvulus mauritanicus*, *Nierembergia gracilis*, and *Lobelia speciosa*, for suspending.

VINEY REPLANTING—BORDER-MAKING (Yorkshire).—The Grapes being cut in June, and the Vines not being wanted for replanting, we would at once make a new border and plant the Vines. Provide yourself now with the Vines you intend planting. We recommend for an outside border—one Buckland Sweetwater, one Foster's White Seedling, one Black Hamburgh, one Pope's or Victoria Hamburgh, and one Black Prince or White Frontignan, just as you wish for a black or white Grape. You could not well select a worse Grape for an outside border than Canon Hall, and if you require the Muscat flavour choose White Frontignan, which is by far the best of the Frontignans, and the only Grape with a Muscat flavour worth planting in an outside border. Keep the Vines you have as cool as possible, and disbud them to the height required, leaving two shoots at the height, where the Vines when planted would reach to the rafter. Provide turf cut 3 inches thick from a pasture where the soil is neither strong nor light, a lightish yellow loam being best. In an open spot pile this layer above layer, grass side downwards, in a stack 4 feet wide, and as much high, and have ready a quantity of old brick rubbish to mix with it at the rate of one cart-load of brick rubbish to six of turf, adding to each cartload two bushels of boiled half-inch bones, and a like quantity of charcoal. When the Grapes are cut dig out the border the full width if there is time, but 6 feet from the front will do. If you have the option make the greater part of the border above ground, and if the situation is low and wet there is the greater necessity for doing this, and concrete the bottom. Mortar riddlings from 3 to 6 inches thick, beaten hard, will do, putting them on in thin layers and beating every layer. On this place from 6 or 9 inches to a foot of stones, half bricks, &c., for drainage, and the bottom of the border should slope to the front, where there should be a drain with an outlet at one end. Place the roughest drainage materials at bottom, and the finer at top, cover the drainage with a layer of soda, grass side downwards, and on the soda lay 2 feet of the compost thoroughly mixed, chopping the turf a little but not very fine, and beating down with a fork, so as to consolidate the compost a little. Having laid 20 inches of the compost on the drainage, and keeping some chopped finer close by, turn the Vines out of the pots, having first introduced the cane through the aperture into the house, and disentangle the roots without breaking or injuring them, and spread them out on the surface. Cover an inch deep with the fine soil, and water with aired water. Plant the whole, and then, commencing with the first Vine, place over it 3 inches more of the general compost. Shade from bright sun and strong light, sprinkling the Vines with water frequently during the day, and keeping the air of the house moist by sprinkling every available surface. If dry weather ensue the Vines should be watered at the root, mulching the border with short litter to prevent evaporation. After they recover the planting make choice of the best shoot, cutting the other away, and remove the shading gradually. Keep the house rather close, giving air early and closing early, and maintaining a moist atmosphere.

MANAGING ORANGE TREES IN TUBS (A Subscriber).—The trees being properly retubbed they would require some time to make fresh roots before they would show any benefit from the fresh compost in the shape of growth, though they would have grown had they been placed in a suitable temperature. Oranges do not usually flower until April or May under ordinary treatment, that being bare protection from frost. If you could afford the fresh-tubbed trees a nice moist atmosphere, with a night temperature of 50°, with a rise of 5° on dull days, 10° on those which are cloudy, with clear intervals, and 15° to 20° on clear days, with corresponding ventilation, they would be gently stimulated into growth, increasing the temperature in a fortnight to 35°. The trees may be syringed overhead morning and evening with water of the same temperature as the house, and the paths, flues, and hot-water apparatus, being sprinkled twice or thrice daily, this will raise a moist growing heat, and the trees will soon show their flowers and make new growth, the appearance of the flowers being dependant on the ripening of the wood the preceding season. Keep the soil moderately moist, neither very wet nor very dry, but moist enough for the roots to run in, giving copious waterings until the roots have taken firm hold of the soil. Water copiously whilst growing, and keep the soil well supplied with moisture whilst the fruit is swelling, lessening the supply in winter, wet being then worse than dryness, though both are injurious. A temperature of from 40° to 45° is sufficient in winter.

SEEDLING CINERARIAS (Country Curate).—They are pretty, but none that are good florists' flowers. Considering the thousands which are raised annually, it is rather curious that so very few are excellent or novel.

VINE LEAVES CRUMPLED (T. B.).—The appearances exhibited by the leaf enclosed are those arising from a check given to the Vines after growth has commenced, and may be caused by the dry cold air admitted in ventilating the house, and a deficiency of heat and moisture in the house at the time. The leaves on the young plants will be all right when the season is more advanced. The temperature after the leaves appear should be 60° at night, and 75° by day, when air may be given, 70° by day from fire heat being sufficient. Those fruiting in pots would have been less liable to a check or to injury from the changes of the atmosphere had they been plunged—if in bottom heat so much the better. The insect is *Curculio poeipae*, or Fitch-black weevil. Search for it at night, spreading a white cloth beneath the plants on which it feeds, and shake the plant over the sheet.

FUCHSIAS FOR EXHIBITION (R. Dartford).—The best Fuchsias of last year's for exhibition and decorative purposes are Charming, Don Giovanni, Printair, Sunshine, Cloth of Gold, when well grown is very beautiful, Minnie Banks, amongst light ones in excellent, and the largest white-coralised Fuchsia is perhaps Emperor of the Fuchsias.

FLOWER-GARDEN PLAN (Gertrude).—It is not advisable to send a list of plants on one page and a plan on another page, which we can only see by turning the leaf. We think your proposed planting will do very well. The white Chrysanthemum will do mixed with the Scarlet Geraniums if the white is good, and kept the same height as the Geraniums. In order to work in your materials we would either mix or ring the three circles at each end, the two opposite each other with pink, or scarlet and yellow, and the other one by itself, with purple and white. We can hardly depart from the resolution not to plant beds or give the best planting, for that would require the whole time of several of our best coadjutors at this season; but if you choose to repeat your plan, however coarsely, and tell us your proposed planting, we will criticise it and tell how, if possible, it may be improved. For this purpose you should state the size of your beds. If you edge all the central beds with Cerastium your using one or two colours in the beds will depend on the size of the plants you bring next the Cerastium—for instance, if you used a tall *Calceolaria* a row of purple *Verbena* would bring it down to the Cerastium. We cannot be sure of the plant of which you send leaves because you do not give its height, nor whether it is hardy. If hardy, and the flower stem about 1 foot or 6 inches in height, then we suspect it is a variety of *Aluga alpina*, or reptans, as one or two varieties have purplish leaves and blue flowers. We are not sure, however, whether the leaves are purple, or have become so from the packing. Some of the tall *Lobelias* have leaves very similar, but then these have generally scarlet and not blue flowers, and they are not generally hardy. Let it be clearly understood that it is next to impossible to name many plants from a leaf alone.

EARLY TULIPS SHORT-STALKED (Idem).—The pots, or a paper funnel inverted over the flowers, would have done good to the Tulips as well as the Hyacinths. We fear manure water will now be too late, but there is no harm in trying. We hope the greenhouse treatment will improve them. See a note on Hyacinths in "Doings of the Last Week."

SOAPSTUDS (E. A. P.).—There is very little fertilising matter in soapstuds alone. It would be a trifle better than water for all the Cabbage tribe. Mixed with house sewage it would form a good liquid manure for the same and all other kitchen garden crops.

CUTTING IN VARIEGATED HOLLY (H. N. E.).—You may cut the Holly into the required shape in May, but the more small shoots that are left the fuller the leaves will come. It does not matter about leaving any leaves, we having reduced several a yard all round, and left nothing but bare stumps, so as to have the appearance of deciduous trees in winter, and by autumn they were as full of leaves as possible. If the weather be dry after cutting we water twice a week during its continuance to make sure of growth, and not unnecessarily lose time. We find they do better if not cut until the eyes in the axils of the leaves have begun to swell. We have some perfect cones that were the ugliest shrubs imaginable before they were cut in.

NAMES OF PLANTS (Ceterach).—1, 2, *Polystichum angulare*; 3, 6, 7, *Asplenium adnigrum*; 4, *Lactuca dilatata*; 5, *Lactuca Filix-mas*; 8, Too young to identify. (*Drina*).—1, *Polypodium vulgare cambricum*; 2, *Asplenium appendiculatum*; 3, *Polystichum angulare proliferum*; 4, *Lactuca Filix-mas*; 5, *Asplenium flaccidum* var.; 6, *Polystichum angulare*, young; 7, *Polystichum aculeatum lobatum*. They will all grow in a house without heat. (*B. C.*).—1, *Polystichum acrostichoides*; 2, *Platyloma rotundifolium*; 3, *Ceterach officinarum*; 4, *Polystichum vestitum* var.; 5, *Selaginella Martensii*; 6, *Polystichum angulare*. (*J. H. Marsh*).—1, Appears to be *Davallia dissecta*; 2, *Gymnogramma Martensii*; 3, *Lactuca decurrens*. (*S. T. Wills*).—Your Fern is *Asplenium adnigrum*; the leaf is of an *Acaelia*. (*A. W. C.*).—*Solanum capsicastrum*, a South Brazilian plant, suitable for pot culture, and very ornamental when covered with its scarlet berries. (*M. D.*).—*Frimula denticulata*, var. *erosa*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending March 25th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun. 19	29.827	29.735	39	24	41½	41½	E.	.00	Overcast; cold and overcast; boisterous; frosty.
Mon. 20	29.974	29.836	36	21	41	41	N.E.	.00	Strong and frosty N E. wind; cold and dry; sharp frost.
Tues. 21	30.015	29.950	42	24	40½	41	E.	.00	Dry and frosty; fine but cold; frosty at night. [but cold.
Wed. 22	29.944	29.913	45	25	40	41	N.	.00	Cold and dry; dusky white clouds; small granular snow; fine
Thurs. 23	29.860	29.816	40	19	40	41	N.	.00	Some snowflakes; slight snow showers & cold; frosty at night
Fri. 24	29.838	29.794	46	18	40½	41	N.	.02	Frosty; dusky and snow-like clouds; sharp frost at night.
Sat. 25	29.837	29.874	45	29	40½	41	S.W.	.15	Frosty; densely overcast; rain; cold showers; rain.
Mean	29.899	29.774	41.86	22.86	40.57	41.1	.....	0.17	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.**THE COLD WEATHER.**

We have been surprised to find how little our chickens have been affected by the cold weather. Perhaps it is, that being so few in number, they are tended with more than usual care. The old birds have suffered much, and although well fed, they have proved but scanty layers. We hear from all quarters, the great want is broody hens. We know places where there should be from two to three hundred chickens, and where there are but twenty or thirty. Pheasants and Partridges are affected by this weather, and if it lasted till their laying season, they would be a week or ten days late in laying. They are not so affected by vicissitudes as ordinary poultry, because they are subject to one season. Nevertheless, those we have in confinement are not more forward than they appeared to be in January. Their one season will come, but some of us want two seasons out of our hens, and all want to rear as many early (?) chickens as they can. As soon as there is a change of the horrible weather everything will start into life. All the hens will lay, many will want to sit. Days are getting longer, nights are getting shorter, the sun is gaining power, the necessity no longer exists for restricting the hens to small numbers of chickens, and March and April must do the work that January and February have left undone. Some of the good ladies of the poultry-yard must allow their progeny to be put out to wet-nurse.

Put eggs under three hens at the same time, a full number, thirteen. Should they all come out, each hen must keep her lot. If they only partially hatch, put all the chickens at once to two hens, and let the third be one of three more put on fresh eggs, taking care that the second time she is allowed to hover those she has hatched. But in order to reduce hatching almost to a certainty, the eggs should be examined at the end of a week or ten days. All the bad should be thrown away, the good ones put under hens that were nested at the same time. It may be done in this way. Choose a sunny morning, and the middle of the day. Hold the egg against any small opening in the door or other part of the building, where there is a strong concentrated ray of light. Look at it through both hands placed telescope fashion. If the light comes clearly through it, and the whole of the egg is of one uniform warm bright colour like the sun, it will never produce a chicken; but if like the moon it has dark shades and spots it is good. These may be seen at the end of four days. Then when the eggs are within two days of hatching get a pailfull of warm water, and choosing the time when the hen is feeding, put the eggs into it. They all swim, and after a minute or two, one will give a sort of jerk, because he feels the warmth, another and another will do the same, till they are all dancing the most extraordinary quadrille ever seen. They elbow, kick, and bang each other, and seem to enjoy it so heartily, that one is almost tempted to put the ear down to the water, in the expectation of hearing laughter inside the shell of a merry one, or a deep "gluck, gluck, gluck," like the Dominie in "Jacob Faithful," from some staid and steady chick that is obliged to laugh, but thinks it *infra dig*. The eggs seem to enjoy it immensely, and our conviction founded on considerable experience, is, that the chickens hatch all the better. The softening of the shell renders their exit easier, and they come into the world stronger. The two or three sulky eggs that take the blows and return none may be discarded. It may be truly said they have no life in them. These little precautions make hatching almost a certainty, and by discarding the bad eggs at the end of a week, and just before hatching, time is saved. Perhaps after the water test, one-third of the eggs submitted to it are rejected. All the good and lively ones are put under two hens, and the third is put on fresh eggs. Spite of all these precautions some will fail, but where they are adopted there is little disappointment.

THE ACCRINGTON POULTRY SHOW.—We have been requested to make public a great contemplated improvement in the management of the Accrington Poultry Show, to be

held on the 6th and 7th of April next. All the poultry, and Pigeons also, will be exhibited at the same elevation, and not tier above tier as heretofore, while every specimen will be exhibited under cover, the omission of which precaution at former meetings left all the birds to take their chance of weather, and, consequently, limited the entries accordingly. As the prize schedule is much increased, we hope to find the coming Show greatly improved both as to quality and quantity.

POULTRY AND EGG-PRESERVING COMPANY.

WHATEVER differences of opinion may exist as to whether poultry can be kept profitably in England from a strictly commercial point of view or not, it is certain that this subject will never be satisfactorily decided by any amount of mere theoretical assertions *pro* or *con*; nor will the problem ever be solved in a national point of view by the success of one or more private persons, whose balance-sheet would be discredited by many sceptics, as we have had ample evidence, in improved farming, the results of which were published year after year by Mr. Mechi and other pioneers. Moreover, to render poultry-breeding profitable in England it must be evident to most persons that the system cannot be carried on as it is now; also that the trial must be made on a somewhat extensive scale to allow of growing or purchasing food at a cheap rate, and of a subdivision of labour, and last, but not least, for establishing a profitable outlet for the produce. Now there are many undertakings which cannot well be tested on a small scale in order to prove what the result would be on a large one, and we believe that poultry-breeding in England is one of them.

It is too much to expect that any private gentleman would run the risk of an outlay of some thousands of pounds to ascertain the value of a new plan of breeding poultry in order to benefit the nation; but as the subject is really one of national importance it is highly desirable that it should command a fair trial. This can be best accomplished by a public company whose accounts would be audited by independent accountants, and the statistics of which would be reliable, and, consequently, valuable to the country at large.

In a former Number it was stated that plans were afoot which would, in all probability, result in calling public attention to the subject and in giving the question a fair trial on a large scale. Since then the preliminary prospectus and the plans have been issued.

Mr. Geyelin has evidently the utmost confidence in the success of the undertaking, as he has taken on himself the trouble and expense of bringing this subject fairly before the public, and he gives the free use of his inventions to the Company, not for a cash consideration, but for shares the value of which must entirely depend on the profitable result of his system of poultry-keeping.

A Company of this description requires only half a dozen gentlemen earnest in their efforts to carry out the proposed system. On our part we shall watch the result of this long vexed question, Can poultry be bred profitably in England? with great interest, for if successful, poultry will be sold, as it ought to be, by weight, like other articles of food.

EXTENSIVE POULTRY-KEEPING.

YOUR correspondent "NEMO" deserves the thanks of the readers of THE JOURNAL OF HORTICULTURE for his sensible and well-timed remarks on the proposed Poultry Company. If others as well qualified to pass an opinion on the matter would give their advice as candidly and unreservedly, valuable service would be rendered to your subscribers—valuable in either case as encouragement or warning. What says your excellent contributor "WILTSHIRE RECTO?" The expression of his opinion would command respect. Not every one who gives the public the benefit of his experience assumes to himself the functions of a "public Mentor." That exalted title would apply rather to him who should instruct us in the art of producing such enormous profits by poultry-keeping. We and our grandmothers, it seems, have to be taught at last "how to suck eggs." Let us be teachable.

My own opinion, gathered from personal observation, is

that a large number of fowls cannot be kept in one spot without serious detriment to their health and profitable employment; that the profits arising from them do not increase in proportion to the number kept; and that no appliance, however ingenious and seemingly well adapted to the purpose, can possibly compensate for the loss of the natural parent. The instincts of the chicken during the most critical period of its existence are feeble, it requires not only the sheltering warmth of the mother's wings, but the mother's watchful care, her affectionate warning, advice, and instruction. No artificial contrivance can provide these. We may hatch eggs, but we cannot successfully rear chickens by machinery.

These remarks are dictated by no spirit of hostility to the proposer of the Poultry Company. I do not know Mr. Geyelin. His very important suggestions and clever arrangements will meet with the confidence of the public in proportion to their standing the test of friendly criticism. This will prove the most profitable advertisement of his scheme if deserving the serious attention of the public.—T. W.

SCHEDULES OF POULTRY SHOWS.

MR. J. WRIGHT is in error as to my having written the postscript without reflection. It is very easy for us exhibitors to say such and such are the "duties" of poultry-show committees—a difficult matter to make them see that these are duties. He says he received a catalogue without any application being made by him, and he says he ought to have received an amended copy. I think he was expecting too much. The alteration concerned Brahma breeders only, and I fancy was made on account of remonstrances from breeders of that variety. It is much too hard to expect that Secretaries are cognizant of the varieties which each amateur keeps; and on second reflection I continue of the same opinion as when I penned the said postscript. I think it would have been wiser, and I dare say more profitable, if Mr. J. Wright had acted as I suggested, and he would have done good to the Brahma cause. I am always willing to meet secretaries half way, and to help them if I can, for "to err is mortal."

In reply to Mr. Irvine, Secretary to the Halifax and Calder Vale Agricultural Association, I plead guilty. I recollect that their schedules have been for "cock and one hen;" but I was treating the subject as regarded first-class shows. Bradford certainly was this, as it offered handsome prizes and silver cups—to the best of my recollection double the amounts offered by the Halifax and Calder Vale, and in the latter case the silver cups were more sparingly held out. Still I plead guilty to forgetting the fact, and I am very glad to add it as strengthening my position, and I trust both Bradford and Halifax and Calder Vale will in this respect find many imitators.—Y. B. A. Z.

THE POULTRY CLUB.

IN the first and second letters I wrote to you, I had no other than the best of wishes for the fair and honest judgment of all poultry be the judges or judge whom they or he may be, and I honestly and frankly avow the same to be my present feelings, and I do hope that you will believe such to be the case. I cannot refrain from expressing my regret, if my former letters have incurred the odium of any well-wisher of fair and honest judgment at our poultry shows. Neither must I forget to remind your readers that I have no ill-will or malice against Mr. Douglas or any other breeder or exhibitor of poultry, so that in touching upon certain letters which have lately appeared in your Journal, your readers and yourself will give me credit for doing my best to place our judges and their judgment on a more honourable and straightforward principle than I have reasons to believe they have been, more particularly since the Poultry Club took its stand in such a form as it has done. In your Journal of March 7th, I find an excellent letter from some one who, like myself, up to this date has written under an assumed name, I mean the one who styles himself "A LOOKER-ON," and I must endorse his words when he says the Club has fallen into no small error by leaving the ap-

pointment of judges in the hands of dealers whose interest is to win prizes, not merely for the sake of the prize itself, but as a means of raising the value of the birds they have for sale. Which member of the Poultry Club will take up this subject and prove clearly to "timid exhibitors," that it is not, to say the least, without its suspicions?

In your No. 203, February 14th, Mr. Douglas gives his advice on the wholesale system, to "A TIMID EXHIBITOR," "Go boldly into exhibiting poultry, or if you keep in that timid state of mind you never will be successful," and further wishes to stamp upon the hearts of exhibitors, that he has neither bred, sold, nor exhibited poultry for two years. Then, again, in No. 205, February 28th, he says, "The pen 'A TIMID EXHIBITOR' alludes to, as bought and sold at Manchester, was claimed when above one hundred were in the Show. It was claimed in my name, not by me, neither was it sold by me." The first sentence is not true, if his words on the day in question are not worthless. How I pity the judge who will lend his name and confess it, and say afterwards, "Neither was it sold by me." Perhaps he will alter somewhat in his tone after reading the straightforward and honest letter of Sir St. George Gore, in your edition of Tuesday last, and the public, I think, cannot entertain a great desire to see such a man of principle judging their produce. I leave it to you whether it is necessary to publish my name in place of "A TIMID EXHIBITOR." If you desire to do so you have my full consent, particularly as several of your subscribers seem desirous to see who and what I am.—J. D. NEWSOME, Batley.

THE OPENING SEASON.

How truly delicious to the snowed-up bee-keeper was the perusal of "A DEVONSHIRE BEE-KEEPER'S" "genial day" among his bees.

What a contrast Devon presented to Renfrewshire! Here wreath upon wreath of snow, with the keen frost and the thick pendant icicles—spring flowers, Crocuses, and Snowdrops, where were they? Just peeping through the ground, buried several feet beneath the snow; the bees close prisoners for many weeks. How could it be otherwise while bitterly

"Boreas wi his blasts did blaw."

There spring flowers in full bloom, bees busy pollen-gathering, and even youthful yellow-jackets dancing with fiery radiance,

"While saft the westlan breezes blaw."

With what a "longing for spring" did that paper inspire us we need not stay to depict, "Our chaplain" having already discoursed so eloquently from that text as only to require our emphatic Amen.

On Tuesday, February 22nd, the sun burst forth with something like spring brightness over the white and glistening landscape. Saw from the windows the snow barricades on the points of the landing-boards sensibly diminish, particularly those that had suffered most from the active tread of that sly little marauder Master Tom Tit, and finally to entice out the bees. Thinking it high time to substitute some more enduring sun shade for the hive-fronts, sallied forth; but there's a lot of black-faced highlanders standing on their hind legs, tearing away most voraciously at some favourite ivy. They must get "a Scotch convoy" to the highway to seek their own home. We pity as we expel them, for they, poor things, are evidently starving. As we return, there, too, is a contrast. Their southern sisters, our own Leicesters, lying around their rack chewing the cud of sweet content, nothing disturbed by the "cawing rooks," not cawing now, but mysteriously silent (although the first Sunday of March, their first field-building day, is so close at hand), as they pace along their broad backs, anxiously raising and carefully examining the silken staple. Not admiring it, surely? Only quietly hunting after small game, as they are also starving. Why do those skylarks raise their tufted crowns so delightedly as they dart from among that troop of poultry in the shed? They have just appropriated a few crumbs or potatoes dropped by those matronly Dorkings. They, too, are starving. But to the bees.

Knee deep waded along the garden walks, or, we should rather say, as nearly as we could guess where walks should

be. Recollecting pollen-gathering from the Devon Laurus-tinus, stopped and disinterred some upper branches of a shrub, and found the bloom not opened. Regretted as we strode along to see here and there on the top of the snow an Italian, now a Britisher, fallen to rise no more. In front of the hives the purity of the snow sullied with quite a shower of excreta, but, fortunately, fewer bees dropped than we had feared. No pollen-gathering—could it be expected? Made all snug and left them.

By Thursday following the snow had silently and quietly passed away, except where the drift had been deepest, as up against the garden wall and around the hives. Stood long and patiently in the wet slush watching the late arrivals, when lo! at longlast in goes an active little Ligurian. Wished to, but durst not, with so much snow still about the hives, raise the frames to ascertain what store was left; but consoled ourselves with the thought that, if short, we could administer a good supply of food directly into the combs, this time without our Devon friend coming down upon us.

Saturday, February 26th, snow entirely gone, mild for the season. Summoned our assistant and set to work. First out slides square straw hive, plenty of food, fair population, that lithe little yellow queen already at work, good sprinkling of eggs, and even some grubs about ready for sealing. Having been somewhat suspicious of the season and of some unhatched cells, around which the fresh brood and eggs were now deposited, excise all brood bed for another experiment, to ascertain if spring be more successful than autumn for the extirpation by excision of the bee plague. Cleaned board, and shut up in the hope that we, too, had had "a last glimpse of foul brood."

Next a black hive; not an egg, but very strong in population and store. Although breeding had not commenced, were struck at the forethought displayed by the workers in busily employing themselves during their confinement in cutting down the massive thicknesses of the emptied upper portions of the combs that had contained honey to the requisite narrow width for brood. As we scrubbed up our capital mahogany boards, artistically cut from old table-tops, we inwardly thanked your genial correspondent, "UPWARDS AND ONWARDS," for the hint. It may interest our old opponent of the "milk-pan and straw hackle" controversy to know that the shadow of the hated hackle has never been cast across his mahogany—we have long ago abolished them. And adopted the pan, eh? Oh, no, as great anti-panists as ever. Something better than either—handsome wooden octagon covers for Stewarton hives as figured in No. 9, only they lift off in a piece, and square ones in the same style for square hives; both of a sufficient altitude to take in the fullest set of storified hives.

The next, another black hive. As many eggs as in Ligurian, but no grubs, thus giving, say, eight or ten days' priority in favour of Italians.

In like manner the eight stocks composing the home apiary looked this. Gratified to find all well stored and peopled, particularly the last. An octagon storified Ligurian, from its determination to resist all interference, and its inmates having on one occasion last summer gained a complete victory over my assistant, has since been rated by him as quite a *noli-me-tangere*. As we approached it, his ready pipe was out at once—this was forbidden at the season—and the cover cautiously raised and slipped off as gently as possible. The inmates made a rush to the entrance in an instant; and before the hive could be raised and placed on the spare board a cluster hung on poor Friday's veil front, and a crowd on either hand, while numbers spread themselves all over his clothing and stung away with that hearty goodwill with which the Italian alone can. The hands were speedily transferred to his trousers' pockets, and the body doubled up, as down the walk he tore at a great rate, leaving his master to clean the board and make all snug as best he could. On the hive being replaced, the bees were built up thick upon the landing-board, and up the hive front, more like June than February. We only wished "J. E. B." had been there to have seen and felt the weight of a real storified hive still 60½ lbs. gross with board.

In the afternoon set off and made a similar examination of the outlying apiary at a farm a mile or two distant. Accompanied by the old farmer, their custodian, went down

into the garden. A glance at the entrance of three of the hives, and then the following colloquy, which we must report for the edification of your Oxfordshire correspondent. "Halloa, Hugh, mice in all the hives! Why didn't you keep a sharp look-out?" "I thoct as muckle; but you see, sir, as they werna my ain I did na jist like to meddle wi them." Confound Scotch caution for once. Off first hackle, and out falls from its apex and rolls on the walk a pretty little ball composed of cut straw, beautifully arranged; how "UPWARDS AND ONWARDS" would have admired the snug little domicile! In each case the mice were gone, and these three Stewartons were all still well stored and peopled, although the deep cuttings into the rich end combs showed how luxuriously our little enemies had fasted during the severe weather. Never suffered from mice before, first indications of them in the home apiary at once putting us on the alert, what had tempted the aggression in this instance being the extreme lowness at which the permanent massive thick stone hive-boards were set bringing the hackles close to the ground. It may be worth noting that the combs generally were much better kept in the hives under the protection of the wooden covers compared with those under hackles. Although both were ventilated alike, still the farmer's hackles did not contain the same body of straw I used to employ.

A third small apiary was too distant to reach that afternoon; but there was no fear of mice there, as the custodian invariably places a bit of lead over the entrance, with only little cuts to allow the bees to be got out singly. We never approved of such contrivances. Nothing like a thorough circulation of pure air underneath hives during the dormant season. Was never more impressed than this winter with the great advantage of giving an ample supply of food when required in October, so as to permit the bees to enjoy a complete dormancy. No hive of mine receives a particle of food till the ventilating ekes are withdrawn in the beginning of April. Thankful to find all so flourishing, and not one foul cell in all my black colonies; those excised from the Ligurian one alone excepted, casting a dark shadow over the prospects for the season.

March 1st.—Young bees on the wing from octagon Ligurian above alluded to. Again the yellow-jackets are in the ascendant.

March 10th.—Cloud of young bees out of a strong black stock, confirmatory of a ten-days earlier start in favour of the Italians.—A RENFREWSHIRE BEE-KEEPER.

EGYPTIAN BEES.—In Lower Egypt where the blooming of flowers is considerably later than in the upper districts, the practice of transporting bee-hives is much followed. The hives are collected from different villages along the banks, each being marked and numbered by the proprietors, to prevent future mistakes. They are then arranged in pyramidal piles, upon the boats prepared to receive them, which, floating gradually down the river, and stopping at certain stages of their passage, remain there a longer or shorter time, according to the produce afforded by the surrounding country. In this manner the bee-boats sail for three months. The bees having culled the honey of the orange flowers in the Said, and of the Arabian jasmine and other flowers in the more northern parts, are brought back to the places from which they have been carried. This procures for the Egyptians delicious honey, and abundance of beeswax. The proprietors in return pay the boatmen a recompense proportioned to the number of hives which have been thus carried about from one extremity of Egypt to the other. The celebrated traveller, Niebuhr, saw upon the Nile, between Cairo and Damietta, a convoy of 4000 hives in their transit from Upper Egypt to the coast of the Delta.

OUR LETTER BOX.

INCREASING ROOM IN A COMMON STRAW HIVE (H.).—Get an ske made of straw of the same diameter as the hive, and of such depth as you may deem fitting. Raise the hive on it as soon as made, and keep it from slipping by means of a few stout hair-pins, stopping the old entrance and filling up all crevices with good mortar.

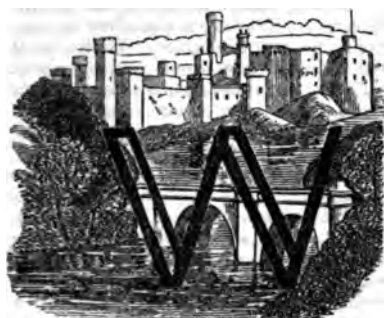
DOVES NOT HATCHING (C. E. M.).—As you mention your Doves sometimes sitting on four eggs, there can be no doubt but that they are two hens, consequently the eggs cannot be fertile. Buy two cocks, or exchange one for a cock.—B. P. BAKER.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	APRIL 4-10, 1885.	Average Temperature near London.			Rain in last 28 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
4	Tu	Crown Imperial flowers.	56.5	36.1	46.3	14	30 af 5	36 af 6	after.	20	2	8	94
5	W	Box flowers.	56.9	36.5	46.7	17	28 5	35 6	8 1	51	2	9	95
6	Th	Black Thorn flowers.	59.1	34.7	46.9	14	26 5	39 6	11 2	19	3	10	96
7	F	PRINCE LEOPOLD BORN, 1853.	59.4	36.9	47.1	18	24 5	41 6	15 3	41	3	11	97
8	S	Common Laurel flowers.	55.7	35.8	45.8	21	22 5	43 6	17 4	5	4	12	98
9	Sun	Palm Sunday.	54.5	35.6	45.9	19	19 5	44 6	19 5	27	4	13	99
10	M	Pear flowers.	55.4	33.6	44.5	15	17 5	46 6	21 6	48	4	14	100

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 56.8°, and its night temperature 35.6°. The greatest heat was 79° on the 7th, 1859; and the lowest cold, 20°, on the 10th, 1860. The greatest fall of rain was 0.73 inch.

THE BREAK IN OUR CIRCLE.



HEN I sent you last evening my mite for poor Mrs. Chitty and her babes, I did not think of saying a word about the sad event; but when I opened my Journal this morning and read the further words of Mr. Wills, and when I looked

through the second subscription list, in which I saw recorded the poor man's shilling (what a large part of his week's wages!) and the collection from the servants' hall, and thought, too, what my Bible says of "a widow and desolate," I felt a power over me which I could not resist (and why should I?), and so I too sit down to lay my wreath on the gardener's coffin. He was a good fellow, and he has departed this life—I do not say died, that word sounds cold, and harsh, and hopeless, while "departed" seems to speak of an entering into a better life, and to whisper of a re-union hereafter. We need not think of the departed, gathered, as we trust, into the safe home of Him our Saxon forefathers loved to call "The Good One." I think rather of the young widow and her and his little ones. But first let me remark that in writing in a periodical year after year one gets to feel that the other writers are somehow or other one's personal friends. We may never have seen them, as I never saw Mr. Chitty, but names seen each week become more than names when attached to outpourings of men's minds; we generally connect some idea of an author with his work. I have my own ideas of the outer man—the look, the eye, the expression of face of each writer. Well—one of the band is gone. A break has been made, by death, in our circle—one "has dropped and disappeared." Only thirty-three! and only a three-days illness! and five little ones left, and scarce one of the five beyond the age of babyhood. I close my eyes and think I see that gardener's cottage as it was a month ago. The mid-day meal is ready on the table, the wife's eye is on her clock, and her ear is listening for "father's" well-known footstep; little round eyes peep through the flower-pots in the window-ledge, and little feet rush to the door as a corner is turned and "father" is seen coming home. Down the path the children run, one tiny supported and pulled along by a bigger sister; that tiny will not *walk* back. No, she is caught up, and carried, and kissed, and petted. Then the meal and the little household events—important events in that little world (all in all to them)—are talked over. What shall be the subject of the next paper for the Journal? Wonderful feats, too, of baby are recounted, and bright say-

ings of another little one recorded. Oh! ye selfish, rich, single men, ye only think of a poor man's poverty, and not of that wealth of love which makes his home a paradise. Just a living and nothing to spare, with a good wife and little ones, are riches beyond aught ye can or *shall* ever know. I thought of that home as it was until recently, and then I thought of sadder things; of the sudden illness, and the first great thought of fear stealing on the wife's heart, and bidding hope leave it—until — But why say more? my own eyes are dim from the sad picture I have drawn. In that gardener's cottage

"Silence o'er the music fell,
And darkness o'er the glory."

And now for the future; after Nature's great burst of grief has subsided, comes, for there must come, to the widow the thought of her future maintenance. A double burden will now be upon the weaker shoulders, children must be brought up without a father to labour for them, to advise them, to guide them. May God bless them, and teach their mother, that she may rightly teach them. Most properly a subscription has been started, and I hope to learn that the money raised will be carefully expended, or funded for a good purpose.

At present lies upon us the duty of giving. Kind, well-off people I ask you to help. If you have never known so great a grief, you might have known it but for His mercy. Show then your thankfulness by helping her whom God has smitten. Some of you have known similar griefs, you will give because you have passed through a like sorrow, and you remember your desolateness then. Some will say as they read, "I pity the poor woman." Then show me what your pity is worth by giving to her. And ye wives who press to your bosoms a child that yet catches at a father's finger, you will give, your husbands will let you, you will give money, and tears, too, I well know. And there are others whose lot has been cast in pleasant places, whose sorrows have been little, whose blessings great—ladies who live a calm and useful single life, but who would have had wives' and mothers' hearts had God willed it so, you have been spared many sorrows, and many cares, I ask you to give, and I know you will, to a "widow and desolate."

And now a word of advice to gardeners, you'll take it well from me I am sure. Let this death make you provident. There is the post-office savings bank, or the life assurance company, or, at any rate, some well-managed benefit society near you. Which will suit you best—one must.

A last word on a higher subject. Half in jest, and half in earnest, I have called myself, and have been called "The Chaplain" of the staff and writers of this Journal. Not the least in jest, but altogether in earnest, I will speak to you as a chaplain should. I say, then, when you see how soon one in health and youth is taken, and he is but one of many, for

"The knell hath tolled—the grave hath yawned
For many a bright and blooming one;
Radiant in life when morning dawned,
But cold in death when day was done!"

Then, I would say, BE READY. There is One ever near to you, through Whom alone you can be ready, for He paid your debt—One who will meet you, especially at your bedside, night and morning. He is waiting for you. Meet Him, then, on your knees, and when death comes He will lead you to a garden (for in heaven there *must* be flowers) more beautiful than any on earth, more beautiful than even was Paradise.

So may poor Chitty's death draw out our active sympathy and cause us to do good to the bereaved, "the widow and fatherless in their affliction," and may it also be a means of good to ourselves.—WILTSHIRE RECTOR.

GARDEN IMPLEMENTS.

(Concluded from page 224.)

IMPLEMENTS FOR CARRYING AND APPLYING WATER, &c.

THE WATERBARROW.—A most useful implement where much watering is to be done and the water has to be carried any distance. It may simply be described as a tub on wheels, but a great deal depends on the form and construction. The best that I know is a tub holding about fifty gallons, swung on a frame, and to this frame are fitted two wooden wheels about 3½ feet high. The height of the wheels causes the whole to run easily. Wooden wheels make less noise than iron. The tub being swung prevents to a great extent the water slopping over. The water may be drawn from the tub by means of a syphon, or a tap fitted in the tub itself, from which, also, a hose may conduct the water to the plants to be watered, without the use of a watering-pot. There are waterbarrows made entirely of metal, and though inferior to those properly constructed of wood, their cheapness and durability are considerations which make up in a great measure for the loss of other qualities. It is also possible to construct one that will answer all the purposes of the best.

GARDEN ENGINES.—There are several patents for so-called superior kinds of garden engines, but, so far as I am able to judge, I have used none I like so well as Read's and Warner's, and these I have generally known to work well and satisfactorily. Beyond this it is scarcely necessary to say anything, but that the tubs should be often cleaned out, and none but clean water used; if dirt and grit get in the leather is apt to be permanently injured. The proper spreader should be used with every kind of engine; it will be found better in effect and more pleasant to use than any other. There ought to be sufficient force in the jet to throw the water over the highest fruit trees, the object being to wash dust, dirt, and insects from trees, plants, &c., and at the same time to afford an imitation of a shower of rain, so as to refresh and invigorate plants after hot days. The watering-pot can be more effectually used in applying water to the roots of plants, but the engine is best for cleaning and refreshing the leaves and shoots.

In connection with the garden engine there are other implements that claim a little notice. The Hydropult, for instance, is supposed to throw water as far as the garden engine, at all events it is very useful, particularly for indoors and small gardens. I would recommend it particularly in town gardens, where it should be used morning and evening in dry weather for washing the dust from the leaves of shrubs and trees. During the spring and summer the health of the trees and appearance of the garden will be vastly improved by such daily ablutions, and no one would begrudge the price after having seen the effects for a season.

There is something better still than a garden engine and syringe—that is a cistern, of sufficient dimensions to contain a large quantity of water, fixed on the roof of the house: from this a pipe is carried to such places as the water is to be applied, and stopcocks are there fitted, to each of which a flexible hose can be screwed, this hose being furnished with spout and spreader. If the cistern is mounted on a three-storey dwelling there will be force enough for all purposes. This will be found the best of all methods of applying water, and though rather expensive in the first instance, the money thus employed would be well spent. Where possible rain water should be conducted into the cistern, but failing that, river water will be the next best, and will answer very well.

SYRINGES.—These have passed through various phases, from the short cross-handled concern of days gone by to the really handsome and convenient implement of the present day. No question can be entertained as to the best kind, which is of a very simple nature. The sliding valve should be made of leather in preference to its being packed with tow, and no one ought to purchase a syringe that is not fitted with a ball top; this admits the water freely, yet acts as a plug on the water being driven out, but allows this to pass in the form of a shower. No matter who may be the maker or patentee, by taking the above as a guide, no mistake can be made. Avoid all jointed and otherwise deformed editions of this useful implement. Also, avoid all such as are furnished with suction hose, &c.; have nothing to do with them, and you will escape much disappointment. The uses of the syringe are so well known, that they need not be entered into here. No greenhouse, vinery, stove, or other plant-house ought to be without one.

WATERING-POTS are certainly indispensable in the garden as well as in the plant-house. They are made of tin or zinc, the former being painted, but not the latter. Their size is a matter of choice, but I should say those holding about four or five gallons would be the most useful and convenient for carrying water, and smaller ones of one and a half or two gallons for applying it. For in-door work amongst potted plants, watering-pots should have rather long spouts, particularly for plants on narrow stages, but they are better and handier if the vent is not too small. A three-quarter-inch vent is small enough for any watering-pot, unless very small indeed. A small watering-pot holding about two quarts, fitted with a fine rose, is very handy for watering cuttings, seeds, &c. Amongst Pines, a pot with a short spout is very useful for watering the plants through a funnel and tube. Other watering-pots may occasionally be found useful, some fitted with a rose, others not. For watering seeds, &c., in the open ground, the large pots above named will generally be the best, the water being applied through the rose. The smaller pots are best with a rose attached, which may often be brought into requisition for small seeds. Generally there are few gardens in which the three sizes I have named will not be sufficient for all purposes, although from fancy or other reasons a man may wish for something different; but mere whims in such matters ought not to be indulged. Many a man has been led away by the notion that he could improve on a simple and effective implement, or that something of his own invention would improve matters wonderfully, and has only found out his mistake after much money has been wasted, and much material spoiled. The more common and simple form of watering-pot will be found the best, and it will be needless to look further and fare worse.

MOWING MACHINES.—These are now indispensable in any garden where there is a lawn. The smallest grass plat, grass edges, or grass walks between flower-beds, may be fitted with a machine, small ones about a foot or 14 inches wide being suitable for the purpose; while for large and broad lawns 22 or 24-inch machines which require two men to work them are better, or even still larger, drawn by a pony or horse. These machines are manufactured by different firms, and it is not for me to recommend those of one maker in preference to those of another. I have no doubt that all machines, if properly made, no matter who may be the maker, both work well, and are durable with care. There are, however, technicalities, which experienced men only can fully appreciate. A machine that the least jolt puts out of order on account of one or more screws not fitting properly, is, to say the least of it, vexatious; but this I have found to be the case in machines that were otherwise perfect. Makers ought to pay attention to this, as well as to make improvements year after year.

A great deal depends on the care and management of the machine itself. Many an one has been laid aside simply because a little common sense was wanting in order to see the cause of its being out of repair. Want of cleanliness is most injurious to these machines. They should always be cleaned and oiled before putting away, pegs kept in the ell-holes, the chain or cogs kept clean, and, in fact, treated as if they were, what they really are, a rather complicated piece of machinery, requiring somewhat more care both in the using and putting away than a common roller. Many

gardeners treat them, however, as if they were nothing more.

SCYTHES.—Although to a certain extent, the scythe is superseded by the mowing machine, still it is not driven entirely out of the garden. There are times when it would be better to mow with the scythe than with the machine. For instance: after much dry weather, when instead of close herbage the lawn is covered with bents or the flower-stalks of the grasses; and also in very wet weather when the machine does not work so well. Although it is never advisable to lay turf in such a position that the machine cannot be used, there are often places where this is so, as on steep banks, or slopes that are too steep to work the machine; the scythe is indispensable in such places. In many gardens the mowing machine has never been introduced, the prejudices in favour of old methods, and in opposition to new, not having been overcome. Strange as it may appear to the scientific gardener, I have known both master and man exclaim against the machine as a useless innovation, applauding the scythe as the only machine worth patronising on the lawn. Such antiquated notions, however, are happily the exception, for the scythe is too slow for these go-a-head days, except in cases where it is retained as a matter of necessity.

Where such is the case, it is worth while to know which kind is the best of the several that are known. As far as my own experience goes, I would not recommend any of the so-called self-adjusting scythes, or other modern improvements, but prefer the more simple, and, as I think, better style of old-fashioned scythe that fastens with ring and wedge. The choice of the blade will require a little of the knowledge of good metal, an old hand can tell the ring of a good scythe. The handle, also, is much a matter of choice. A pouch, fastened round the waist with a strap, and a good Devonshire stone, are essentials required by the mower.

SHEARS are both useful and necessary appliances where there is much grass. Generally two kinds will be required: the short-handled shears for clipping the sides of banks, narrow corners, and such-like places—these should be rather small than otherwise, and kept in good repair, or the work cannot be done well or quickly—and the long-handled shears which are used for clipping the edges of grass. The handiest are those which are bent at an angle of about 80°. If the shears are kept in good repair the work will be done much better than if they are allowed to get out of order. The same applies to all cutting instruments. There are also shears made with long handles for clipping the surface of the lawn without bending the back. These, however, had better be left out of the catalogue.

THE EDGING IRON is for cutting the edges of the lawn or grass verges when they have been trodden down or are otherwise out of form. This instrument should be used once every year, about the end of March.

THE SAW.—There are various forms of this instrument, said to be made expressly for various objects. I consider, however, that there is no necessity for having more than one, which may be called a pruning saw. This should have double teeth, which is best for green wood, the blade being rather narrow and about 18 inches in length. This will answer in all cases where a saw is required in pruning or cutting out dead wood, but had better not be used for sawing dry wood or logs, which would spoil the teeth for pruning. If the saw is simply used for that purpose it will last a long time without the necessity of refiling or sharpening. A large handsaw will be found very useful in cutting up logs, &c., and where there is much wood it will often be called into requisition. Instruments are sometimes made having the blade of a bill or chopper on one side, and a saw on the other, but are not generally desirable.

THE BILL OR HATCHET.—There are various kinds or forms of this instrument all more or less handy. That form in general use by the hedgers about London will be found the most convenient. The blade is straight, about 10 inches long, with a small hook on the back, at the end opposite the handle; it has a short wooden handle let into an iron socket. The blade is generally of good steel. This kind of bill I have found the most convenient in the garden, and though it will not be required for pruning, it will be useful to cut up the boughs as they are sawn off the trees, and make them into pieces suitable for tying up in faggots. This

bill is also useful for cutting pea sticks into the proper size and form, and, indeed, for any purpose where a bill or hatchet is required, including hedging or hedge trimming. There will, however, be a difference of opinion as to the form of bill which is the most handy, and it would be as well to let the workman choose his own.

THE AXE will sometimes be useful in the garden as well as in the woods. It will, however, be only in exceptional cases, such as lopping off the larger branches of trees after they have been

—F. CHITTY.

[The sentence was thus left unfinished by Mr. Chitty; his death-disease seems to have deprived him of the energy needed for the completion of his task. There is a mournful interest attaches to this. It remains as evidence of a good and true man striving to be useful even when disease forbade his being active—it was his last effort, and there is a sorrowfulness attaches to the knowledge that it was the "last."]

Mr. Chitty, let us repeat, has left a widow and five young children unprovided for, and we shall be glad to receive further contributions for their assistance.—Eds.]

THE MODERN PEACHPRUNER.

No. 7.

USEFUL MAXIMS.

1. It is essential to form the tree into two equal wings, so as to direct the main current of the ascending sap into two channels. By this means it is best mastered and held in check. The sap has always a very great tendency to flow in a vertical direction, therefore any vertical line is a difficulty in training. The consequence of a neglect of this law in vegetation is that the lower portion of a tree becomes feeble, bears small fruit, is exhausted even by this production, languishes, and dries up, while the upper branches, receiving a superabundance of sap which cannot be elaborated, become rankly luxuriant, and so produce few flower-buds.

2. In forming a tree it is an error to trust to shortening back the branches at the winter pruning. A better mode would be, during the period of growth, to incline a too strong branch to a horizontal direction, and to tie up vertically a too weak branch. Of all the plans adopted for this purpose this is the simplest and the most efficacious. The weaker branch should also be allowed a greater freedom, so that the sun and air may have free access all round it. Any shoots on the weaker branch which are to be ultimately removed should be allowed to remain on it as long as possible to attract the sap to it. The more leaves thus left the more strength does the branch gain. The contrary practice, of course, should be applied to the too vigorous branch of the other wing. Fruits exhaust the branch, as they require much sap to nourish them, therefore we should not leave too many on a weak branch, where, however, they generally soonest appear.

By a combination of these simple means the equilibrium of the vegetation of the tree may be restored during the season of growth, leaving comparatively little to be done at the winter pruning. Considerable amputations always injure trees, however well performed. The modern school especially recognise this principle, which is so much aided by the summer stopping of the shoots that little or no shortening of the leading branches is ever required. We require all the growth a tree can make; and the object proposed by shortening-in the branches, often by fully one-third of their length, so as to make the lower eyes break, can and ought to be obtained by more natural means. If we take care of the fruitful shoots these will soon master the branch. The only use of the latter is to carry the former, and these should be especially attended to.

3. If we wish to obtain fruitful shoots the branches must be left as long as possible. A contrary practice produces only excessively vigorous shoots which are unfruitful. Trees only produce flower-buds when, after having acquired a certain development, the sap circulates more slowly. The forms which trained trees are made to assume very much contribute to favour this production of flower-buds by distributing the current of the sap into diverging lines, and avoiding all vertical lines. The more these forms are com-

pleted the more trouble the sap has to circulate, and the more time it has to become fully elaborated in the leaves by the action of the light and air. The sap, converted into cambium, must also descend more slowly by each separate channel. This is a valuable aid towards the production of fruit-buds, these, probably, being produced by the descending fluid alone. Be this as it may, and the question is not as yet satisfactorily decided, all seem agreed that to a diminished circulation is owing the formation of the genuine fruit-bud. Lifting the tree, without injuring the roots, is a powerful remedy when it is too vigorous, and making rank growths. In many forms, however, which will be hereafter more fully entered into, this lifting is never necessary in Peach trees, because by summer stopping the shoots are rendered fruitful, while the roots from the close planting of the trees cannot acquire any undue development. In the orchard-house I have never lifted any Peach trees, because fertility was obtainable by the other means described. Diagonal cordon Peach trees having only short fruitful shoots on the main branches or leaders are easily restrained in vigour. The fruit are produced close to the main leaders by which they receive the direct action of the sap, and so become largest.

4. It is an axiom in Peach-culture thus to obtain the fruit close to the base of the shoots. When, on the contrary, these shoots are allowed to produce spray as well as the spurs, a number of useless flower-buds are formed which the tree has no strength to mature. The sap is exhausted by following so many needless channels, and the fruits either fall at the period of stoning, or remain small and hard. This defect is apparent chiefly in trees pruned on the "long system." On the other hand, by close and judicious summer stopping, in ordinary summers the flower-buds will be developed near the very base of each shoot.

5. During severe weather no pruning whatever should be undertaken, either of trees in the open air or in the orchard-house. The danger lies in exposing by the cut the orifices of the sap-vessels; these burst and are liable to decay. Such trees as are exhausted by their crop should be cut early in the autumn. This operation relieves the tree and aids in promoting the next year's crop. After a sunny and dry summer the wood is ripe, and should also be pruned early, for the reason mentioned above.

6. Never prune the Peach-tree much at one time. If pruned during the period of growth much sap is lost from the wounded shoots before they can cicatrise. If this occurs in the winter, that being the time for any more important change, the tree always feels it. Bending down branches even at that time is not always a safe operation, unless gradually done, because at the lower portion where the bend occurs the bark is compressed, and the sap cannot ascend nor descend there so well as it did previously. On the other hand, the upper portion of the bark is distended extremely, and there is much risk of a very strong wood shoot pushing vertically. A portion of the winter pruning should, therefore, be left for February; many shoots about which the pruner had not made up his mind may then be regulated, not to mention the numerous unavoidable accidents which occur during a whole season, and disorder all our calculations.

7. Above all, let the amateur avoid considerable amputations of his Peach trees. When he has to perform one let him cut cleanly and as close as he can to the base of the ramification.—T. C. BRÉHAUT.

ANNUAL EXHIBITION OF THE MAIDSTONE GARDENERS' SOCIETY.—The second annual exhibition of the Maidstone Gardeners' Mutual Improvement Association took place on Tuesday at the Corn Exchange. Considering the adverse character of the winter, and the frost which set in on Sunday evening, the plants, both as regarded their number and quality, far exceeded the expectations of the members, and the arrangements were so admirably carried out as to meet with the unqualified approbation of every one, though great things were expected this year, in consequence of the universal satisfaction which attended the last exhibition. The room presented the appearance of a winter garden, upon which had been bestowed the concentrated energies of thirty ardent horticulturists. To say that the achievement

reflected the utmost credit upon the Association, is but a small tribute to a society which has done more to elevate the gardening community of this town and neighbourhood than almost any other means. It is computed that about 1800 visited the exhibition, and the pecuniary results must consequently have justified the expectations of the members and covered the expenses attending the show. The upper decorations were principally designed by the President of the society (Mr. Robson), to whom many thanks are due. They were left till the following evening and contributed largely to the enjoyment of the visitors to the temperance society.—(Maidstone Journal.)

POSITION OF BEDS AND BORDERS— MUSHROOM-BEDS COLD.

I RATHER differ from the editorial remarks about the border in front of the house in the garden plan of "A. E. L.," in your Number of March 14th.

The border, B, which was narrow, was made wider, and last year it was by far the best thing in the garden. It is in front of a house which stands in a very airy and exposed situation, and it is a great advantage to the plants to have the protection from the north winds. Where old creepers—such as climbing Roses, Wistaria, Jasmine, &c., are growing against the house, they will not do well without a border, and I do not think any old house looks well without these flowering creepers against it. Is it not better in such a case to have borders and to make them broad enough to hold bedding-out plants as well as the roots of the creepers? I have always recommended this plan, and have already laid out eight or nine gardens for different friends, besides giving plans and designs for others where I have not been able to go myself, so that your adverse criticism was entirely contrary to all my preconceived ideas.

I have two or three leading theories about garden plans, one is—that each bed ought to make a perfect and uniform shape of itself; secondly, that in a set of beds the walks ought to form patterns as well as the beds; thirdly, all points and unequal-shaped beds ought to be avoided as much as possible; fourthly, if on grass all walks should be made of a nearly uniform width, and so that a mowing-machine can be worked in and out without much trouble and without trampling on the borders, so as to avoid the necessity of clipping afterwards. Thus the design in page 214 answers in my opinion all these rules; but in that at page 232, the large scroll beds are quite out of proportion, so that in order to plant it properly you are obliged to divide it into three or four members with different colours, breaking the line of continuity, and practically making it into three or four unequal-shaped beds. The bed, No. 1, and the borders on each side are good because uniform; but the scroll-beds do not answer one law—i. e., they cannot by any line be divided into two equal halves, and all beautiful shapes in nature for the most part are capable of this division, as all animals down the vertebrae; leaves down the midrib; flowers by a line drawn at right angles to the corolla, &c.

Excuse this long letter! I am puzzled what to do with a Mushroom-bed. It is in a cellar, inside what was a large bin, about 5 feet by 3, the sides are brick, and it is covered with a wooden lid which fits quite tight. I put about 15 inches of droppings gathered in the usual way and never exposed to any weather. The heat rose well, and I spawned in about five days, and covered with 1½ inch of soil tolerably dry. All was as well as could be for a fortnight, but now the bed has lost its heat, and I am afraid has become too cold to produce Mushrooms. As it was inside a cellar and a wooden air-tight covering over it, I did not put any litter or anything over the bed, thinking it would keep its own heat. Can that be the cause?—X. Y. Z.

[It is always well to agree to differ, and differ yet agree. The longer we live the more tolerant we become to the opinions of others, and the less dogmatic we become as to our own. As a general principle we still hold to the opinion expressed at page 214, in relation to the border B. "That such borders conjure up ideas of damp and mouldiness in the walls. Such borders, and pots, and boxes there, also remind one of a town garden." Circumstances, however, alter cases. If the house is so old and its appearance

unsightly as to render covering the walls with luxuriant creepers desirable, then we have no fault to find with the broad border, and ribboning that border if the proprietor so feels inclined. No doubt the background of the climbers against the walls would shade back the colours of the flowers as well as protect them.

As a general rule, however, the fleeting beauty of bedding plants is associated with different ideas from those impressed by the solid structure of a mansion, and for a mansion of large size, we think the flower garden would have been near enough; but let every man enjoy that which gives him the greatest amount of pleasure. Allow us now to pass a remark or two in the same kindly spirit as that in which you write, as to the principles of design in flower gardens, as exemplified in the plan, page 214.

1. "Every bed ought to make a perfect and uniform shape of itself." We hardly understand this. Every single bed should be so formed and planted as to make a unique whole in itself. Every group of beds should be so formed as to make a well-balanced whole. This we presume is different from having each bed of a perfect and uniform shape of itself. What constitutes perfection in shape? We cannot beat the circle, the rounded squares might pass muster; but set out any of the rest of the beds in that group solitary, alone, and by what rules could we demonstrate that each and every was perfect in shape, or more perfect than any other shape? Of course, we are here taking no notice of the manner in which the figures of the main part of the group nicely fit into each other.

2. "Walks ought to form patterns as well as the beds." This will be done as a matter of course, but these patterns are not confined to regular geometrical arrangements. The patterns formed by the walks or open spaces in the plan at page 232, would by many be more liked than those at page 214, just in proportion as they had a finer eye for the sweeping artistic, than for the regular geometrical. We could not say which plan is the better.

3. "All points and unequal-shaped beds ought to be avoided." True, but leave out the circles and rounded squares, or flattened circles, and every figure besides, in page 214, has its allowance of sharp points. Judged by the absence of sharp points, the plan at page 232, must carry the honours.

4. There can be no question as to the desirability of all the pathways, if grass, being so made that they can be cut with the mowing-machines, and this is insured by your plan. This is one reason why most scroll patterns, as at page 232, should be on gravel.

We attach but little importance to the analogy drawn from the vertebrae of animals, and the midrib of leaves, as showing the importance of being able to divide a group of beds into two equal halves. This is desirable, but there is nothing undesirable in being able to divide the group into four equal quarters. This your plan would not permit, but the other would; and we think your plan would be improved by having the two circles (12) banded round with three clumps as in 13, so as to admit of this quartering.

We would here advance one rule in laying down a figure, which is something like a necessity to the perfection of the form of the group—namely, that you cannot take out a clump and substitute another of a different shape without destroying the balance and the harmony of the whole. Apply this rule to the central seventeen beds, and see how true it holds. Apply it to one end, 13, 14, 15, 15, and to balance you must make another end like it. Apply it to the two circles (12), and the four rounded squares (16), and what becomes of such a rule, if as rule it be received? You might do without these six figures altogether without injuring in the least the balance of the main group. You might make them of any other shape or form, and they would be equally helpless to injure farther than appear as so many excrescences. Let your two circles (12), stand, and put a band round them, as in 13, and we believe your four quarters would be better than two halves; make the four 16's, into circles and band them in a similar way, and we question very much whether the effect would not be better still. As it is, we do not see why, so far as perfection in form is concerned, the 12's and 16's should not be changed into each other, or even into such five-sided figures as 6 and 7, &c. The subject is worth ventilating. We showed how the scrolls could be more simply planted. In one word, whatever our separate opinions, we

may rest assured that those who admire graceful sweeping lines, will admire scroll patterns; and those who admire massive, easily-managed beds of flowers, will adopt such plans as yours, at page 214.

As to the Mushroom-bed; if the soil is dry, and you want Mushrooms soon, water with water of about 75°, and put a little hay over the bed. If the bed is moderately moist beneath, and you are content to wait, we have little doubt you will obtain Mushrooms as the weather, and therefore the cellar, becomes warmer.]

NOTES ON SOME NEW PLANTS AT MR. W. BULL'S, CHELSEA.

I THOUGHT the other day, that when I noticed some of the novelties in Mr. Bull's establishment I had had enough of new plants to last me some time; but having heard that the importations which he had expected from abroad had arrived, and that I should find some remarkable things amongst them, I took the opportunity, while in town on other matters, of running over to Chelsea and seeing with my own eyes as far as I could the treasures he had received; and as far as my poor opinion goes, I am convinced that there are many plants which will be of great interest both in a botanical and horticultural point of view. Many of them were in a condition in which it would be impossible to form a very decided opinion, while others gave evidence of their beauty and singularity.

I have already alluded to the very interesting variegated *Aucubas* received by Mr. Bull from the continent, where they were introduced by Dr. Von Siebold; but he has some green-leaved varieties which will be, I think, equally interesting, and which have already received certificates both at the Royal Horticultural and Botanic Societies. Then there was *A. japonica macrophylla*, with a light spinach-coloured green leaf fully 9 inches long by 4½ wide; *latifolia*, very broad dark green leaf, quite distinct; and *mascula angulata*, very narrow leaf. The variegated varieties were *lanceifolia variegata*, margined with gold; *mascula elegans* and *mascula elegantissima*, broad leaf, yellow blotch; *mascula bicolor*, deep yellow centre to leaf; *sulphurea*, edged with sulphur yellow, the yellow also interspersed in the green; *varia*, distinct deep yellow blotch; *mascula picta*, also yellow-blotched. These are all distinct, although it may seem that in describing them as yellow-blotched and green there is great sameness; but any one can at once see the great distinctness that there is in the different varieties, and what a fine feature they will by-and-by make in our gardens.

Of new *Camellias* there were *Prince Camille*, fine shaded rose, of exquisite shape, and *Comtesse de Gonda*, a very pretty light pink flaked with deep crimson, promising to be a very pretty variety. Then there was an older kind—*Mrs. Abbey Wilder*, a beautiful white, but interesting from the fact that *Queen of Beauties* is a fired sport from it. Some of these new varieties of *Camellias* are quite putting the older ones into the shade.

Ferns—that ever-increasing family whose name now is legion, and some of whose members are ever arriving from different parts of the world—were well represented by *Adiantum robustum*, a splendid strong-growing kind of fine foliage; *Lastrea erythrosora*, a hardy and pretty species from Japan; *Odontosoria tenuifolia stricta*, differing from the normal condition of the plant in having stiff upright foliage; *Ophioglossum palmatum*, a very handsome species introduced in dried specimens, it is said by one of the best authorities on the subject, two hundred years ago, but of which the only living example is that which Mr. Bull has; a very beautiful *Asplenium* called *myriophyllum*, which will make a companion plant to *Todea superba*; and a fine *Aspidium*, not yet named, from Para.

Of fine-foliaged plants, suitable, perhaps, for sub-tropical gardening, such as Mr. Gibson has so successfully carried out at Battersea, there were some plants which will make a figure I fancy by-and-by. These were two *Solanums* of great size, and indeed of great names—one of them, at least, for it was called *S. pyracanthum horridum aureum*! deep golden-yellow spines; and *Solanum crinitum*, of which the leaves were 2 feet long by, in their widest part, the same

width: this had white spines, but both promised to rival the *Wigandias*, *Ferdinandias*, and other plants of similar character now used. Of those which might be more correctly designated as stove plants there were some fine things. Thus there was *Saurauja sarapigiensis*, with a broad *Sphærogyné*-like leaf, the leaves measuring 19 inches long by 8 wide; the midrib being of a bright carmine, and the rest of a lighter shade of the same colour; when well grown this will be a noble-looking plant. Of a somewhat similar character was *Sphærogyné cinnamomea*, of which the stem, ribs, and under surface of the leaves were of a bright cinnamon colour. There were also a fine *Cupania undulata*, of graceful pendant habit; and a new species of *Leea*, of a beautiful drooping habit also. *Pandanus*, which has so many ornamental species already, was represented by *Pandanus Lennai*, somewhat like *elegantissima*, but with white spines; and curiously enough the spines in the midrib turn downwards while those on the edge turn upwards. With this there was *Pandanus Vandermeerschii*, a fine delicate leaf with white spines, a sweetly pretty variety. And what shall we say to a bright sky blue *Amaryllis*? This I did not see in flower; but in *Impératrice des Brâzils* Mr. Bull possesses such a glorious subject! Its flowers are said to equal in size *Ackermanni* and others of the same character, and to be a genuine bright blue.

I ought to mention, too, a plant which will be interesting to many from the associations connected with it—*Salvadora persica*, the Mustard tree of Scripture, and which Mr. Bull has already announced for distribution. *Allamanda Hendersoni*, said to be the very finest of its class, is also here in Mr. Bull's possession, and promises to be a great favourite.

And now, as ladies are said to reserve the pith of their letters for the postscript, so have I reserved to the last mention of a very curious, and, as far as I could judge, a very beautiful tribe entirely new to us—viz., some new *Urospathas* from South America. They belong to the *Aroides*, the leaves having somewhat of the curious winged character we see in some of the members of that family, but still more fantastic. They differ from *Alloacasias* in two very important particulars—instead of having bulbous roots they have long creeping rhizomes like some of the creeping Ferns, and instead of being deciduous they preserve their foliage all the winter—a very decided advantage. Then this foliage is marked in a most beautiful and singular manner. In some there is a red ground netted all over with green, others have a creamy white ground interspersed with green, others are blotched with red, and in fact it is hardly possible at present to say what strange forms and colours they will present; but I think enough is seen to enable one to say that they will indeed prove one of the most decided acquisitions in ornamental-folaged stove plants that we have had for some years. When I add that the entire stock of many of the most prominent and beautiful of the preceding plants are exclusively in Mr. Bull's possession, those interested in such things (and who are not?) can form some idea of the treat in store for them by a visit to his establishment.

And so must end my notes. Will any one wonder after seeing all this, and having the words "new," "novelties," &c., ringing in my ears, that when I "turned in" for the night my dreams should have been coloured by what I saw?—that I fancied Mr. Bull was clipping off the few hairs I had left in my rapidly decreasing locks, and was inserting them in thumb-pots, and dosing them with "thine inimitable oil Macassar," as an entirely new sort—that my digits were expanding into creeping rhizomes, while all over me there was a general sprouting process going on which threatened to exhaust all the tissues of my poor body—and that an admiring bevy of botanists were minutely surveying my poor self, and disputing as to what new genus they should ascribe me to. Unhappily I was not in my own home, so that I had no friendly nudge to startle me out of my visions by "My dear, you must have eaten something that disagreed with you;" so that it went on until I was heartily glad to awake and find, as old John Bunyan hath it, Behold it was all a dream.—D., Deal.

LARGE PICEA PINSAPO.—In your Numbers of February 28th, and March 7th, correspondents describe the size of specimens of that noble Conifer, *Picea pinsapo*, growing at

Luton, and at Woodlands, Redhill, respectively, 42 feet in circumference, and 14 feet high; 44 feet in circumference, and 19 feet high. It may be interesting to know that a fine specimen is growing here which measures 24 feet in height, and 54 feet in circumference round the branches at the ground and for two-thirds of the distance up, the tree thence forms a cone to the summit (the latter grew 2 feet long last summer above the uppermost tier of branches); it thus assumes a cylindrical form, ending in a cone. Doubtless there are other specimens of it in the United Kingdom, which for size outstrip this.—W. GARDINER, *Katington Park, Stratford-on-Avon*.

MY ORCHARD-HOUSE

Is now passing out of bloom; there has never been such a fair promise of fruit before, and this is the eighth season. Our numerous visitors display an undiminished interest in the hundred varieties of the choicest Peaches and Nectarines in existence, now so beautiful. The season has been backward but shows signs of change. The equinoctial gales came from the N.E., a sign of a dry summer.

Not sufficient account is taken of the difference of colour in the flowers of the Peaches and Nectarines in classifying them into two divisions of large and small. At any rate colour forms an unerring guide, and an observer will discover many distinct shades, all indicative of parentage.—T. C. BRÉHAUT.

NUMBER OF WORKING HOURS FOR GARDENERS.

FROM your article with the above heading I rather differ, I am of opinion that when gardeners are paid their full wages all the year round, which is my case, they should not be over-nice when the work is pressing, and the days are long. I feel confident that my man for many days together, and that frequently in the winter, does not do work worth 9s., when his wages are 18s. per week. I think both master and servant in such cases should give and take. For months in the winter there are not ten hours daylight, and for some time only from eight to nine, when the dinner hour is taken out. Even if the weather is suitable a man can do little towards earning the wages he is paid; and of this I feel confident, if a gardener knows work is greatly required to be done, and will remain occasionally an hour or so longer, he, in the long run, loses nothing by it, but, on the contrary, gains greatly in the esteem of his employer, and in many other ways. — A MANY YEARS' SUBSCRIBER, near Birmingham.

[You say that you differ from us, though we, in the main, do not see clearly where the difference lies. We also advocated the give-and-take principle as to time, and even advocated the propriety of the gardener not taking without the knowledge and sanction of his employer. In thorough contradiction to the old proverb, that "stolen waters are sweet," we believe that in the end they are very bitter, and hence have contended that for a gardener ever to enjoy a change or a holiday thoroughly, he must have that holiday with the sanction of his employers. In all such cases as yours, however, where much is expected in summer, to make up for the short days of winter, it will always be advisable not to trust to any custom, &c., but to have the terms explicitly stated. This would at once prevent unpleasantness, so long as the mutual relations of master and servant continued. Though we give this opinion under the circumstances, we do not thoroughly agree in your conclusions.]

1. A gardener out of doors in winter is placed in much the same position as other workmen, who receive the same pay as in summer, because there is much more discomfort in doing work at that time, and also because the employer knows if he did not so give employment in winter, he would not be able to get the labour he wants in summer. This fact applies to a gardener merely as an out-door labourer, and where he has no glass or plants under glass to attend to. Even then there are numbers of jobs that may be done in bad weather, and thus permit of more straightforward

work in good, suitable weather. But if the gardener has glass under his care, his position is very different from that of the labourer or the mechanic, whose work is finished when darkness comes. Then, often, the anxieties of the gardener are only commencing, and often will he be going to work when his neighbours are going to bed. Even in such a case, by banking up fires, whether they are wanted or not, he may save himself trouble after evening, or greatly reduce it, but in that case, at the expense of his employer's fuel heap. In many such cases where economy is practised, a winter such as this last is much harder on the gardener than the general summer work.

2. Though we agree with you, that working a few hours longer, when work wants doing, will be no injury to the gardener, and may often command the esteem and good offices of his employer (and almost every gardener we have known, would do so without receiving any hint as to its propriety, more especially when kindness on the one hand becomes the most powerful means for evoking gratitude and fidelity on the other)—still agreeing with all this, we think it necessary to state, that the more intelligent and imbued with self-respect a man becomes, not only will he be more faithful to his employer, but he will also be more anxious that his services shall be remunerated in the shape of wages, as a matter of right, so long as the agreement lasts, instead of defective wages, being made up "in many other ways" as a matter of favour, and next door to a matter of charity. Not but that a kind present whets the zeal and activity of a man; what we want to remonstrate against, is the self-satisfaction produced in the donor from giving as a matter of kindness and of bounty, what ought to have been given merely as a matter of justice.

Again, we say nothing as regards those whom no number of hours would satisfy, we allude to such readers as are perfectly reasonable in the matter, and who merely think a gardener may give a few extra hours work now and then, when particularly required. On that we are all agreed, but we wish it to be clearly understood, as the result of much observation and experience, that continued long hours for any length of time, will not only impair the physical energy of the worker, but they will be of no benefit to the employer. Once, or twice, or oftener, in a week at times, is all very well, but only let a man continue for some weeks—say from five to eight, and even with extra nourishment, he will soon do less than if he worked from six to six. We have noticed that this would be the case even when the men thought they were doing their best, and were anxious that they should make their labour tell. Even then as a matter of profit to the employer, we believe long hours continuously to be a delusion, and if the men do not live well, we believe that they will be a direct loss. Now and then is a different affair.

And, lastly, without anything like a reflection on our correspondent, we suppose that there will always be many who will consider that from 9s. in winter, to 18s. in summer, will be sufficient to repay the gardener for all his anxieties and cares. True, there will always be great numbers of places where the proprietor only requires a good garden labourer for his garden, and who will find him more suitable for his purposes, than if he had a man of greater accomplishments. We need not here stop to prophesy about the "good time coming," when to make the most of small places greater intelligence and greater wages will be required. We point broadly to the fact, that such is not the case now, and to that fact we respectfully solicit the attention of the Council of the Royal Horticultural Society, who are laudably endeavouring to produce a race of *great horticulturists*, by ensuring that young gardeners shall be men of great and general intelligence. We say advisedly, that however well meant, the whole scheme now, as heretofore, will be a "delusion and a snare," unless the Council so bring their influence to bear as to convince the owners of gardens of the propriety of employing such accomplished men, and the necessity of giving them a much advanced rate of remuneration. We will ever advocate the young gardener's improving and educating himself, and gaining knowledge in every field, partly that he may be able to hold a good place when he obtains it, but chiefly for the pleasure and the happiness that knowledge based on moral principle will ever bring to its possessor. We shall have more faith in examinations

and diplomas, when we see these valued by employers, and some greater and general prizes held out in the way of remuneration.]

"A LANCASHIRE LAD" has written his ideas on this subject, but little can be added in reply to what was said at page 233, and to-day in answer to a correspondent who thinks that gardeners should work long hours in summer to make up for short hours and unremunerative labour in winter. Stopping for tea is not general, and could not be practised where the gardener does not live close to the garden; but when he does so it will be a great help to him, especially when he contemplates working for some time after six o'clock. "A LANCASHIRE LAD" must be a young gardener, and it may be well to say in the way of caution that young men have been injured by working too long without refreshment. As to the other two ideas—first the advocating the working half an hour later on five days of the week, in order that these half hours may be taken back again on Saturday, carrying out such an arrangement must be wholly a matter of agreement. In many establishments this would answer admirably; in others it would not suit at all, where all hands are often required to finish up work on Saturday, so that no unnecessary labour shall be performed on the Sunday. Where there is much glass, and a great deal of plant culture in pots, Saturday would be the most unsuitable day of the week for a holiday; but, as already stated, that is no reason why the gardener should not have a holiday as well as other workmen, whether they work with head or hands, or both.

The other idea involved in the question, Why cannot a gardener take a half-holiday without being obliged to ask for it? just shows the futility of continuing such a discussion, as no expression of opinion would be binding, as every proprietor of a garden, and every manager of a large garden, will still reserve the right of deciding as to the order and the mode in which they shall be served. If that mode savours of the grinding and despotic they will in due time perceive their error. It is best for all parties that there should be a clear understanding, instead of depending on custom among other workmen who, take time to themselves when they think proper, and without condescending to consult or ask any one. Surely "A LANCASHIRE LAD" must have some little idea how these independent care-for-nobody men get on in life. He must know that when a slack time comes they are the first to leave from yard and factory, and even in brisk times they are often told to pack up their tools, as the employer cannot afford to pay rent for empty benches. I will stand up for reasonable rights for our order, but I contend that what is worth having is worth a clear mutual understanding. Let gardeners in small places, and under-gardeners and labourers in large ones, act on the "Lancashire Lad" principle and farewell to everything like system and order. Employers who, like another correspondent, may think they overpay their gardeners in bad weather in winter, may have some reason for grumbling if, after such payment, they find that instead of attending to their interests their servants look after their own business and their own pleasure in the fine working days of spring and summer. No! no! that is not the way to secure kind considerate employers and faithful industrious servants.—R. F.

[We have received more letters from young gardeners urging their "right" to a Saturday half-holiday, and one says that they are not treated with sufficient consideration because they have no "union." We sent one of those letters to Mr. Fish, and the foregoing is his reply. To all that he, an old gardener alive to the interests of his craft, has said we fully assent, and we will add that no master would retain an under-gardener who urged his "right" to a half-holiday, for he has no more "right" to one than have his employer's grooms and coachmen. Suppose they claimed half-holidays as a right! As for want of "union" among young gardeners, if it is meant that they should combine and "strike" to effect their desires, we, as their friend, can only hope that they will never be so very blind to consequences. Head skilled gardeners are not easily replaced, but those in their pupilage would have successors found without such difficulty.—Eds.]

ROYAL HORTICULTURAL SOCIETY.

WEEKLY SHOW.—APRIL 1ST.

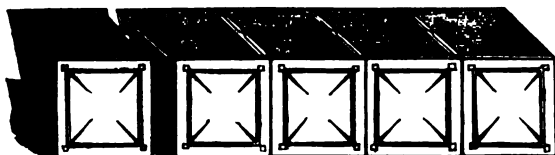
ON this occasion Mr. Bull sent a small collection of Camellias, striped Azaleas, *Medinilla magnifica*, a small plant of *Alocasia Lowii*, *Bertolonia margaritacea*, the leaves beautifully studded as if with pearls, *Arisæma ringens purpuratum*, *Anthurium leuconeurum*, his fine *Imantophyllum miniatum*, *Sauromatum guttatum*, *Cineraria Attraction*, with a broad white ring margined with bright rosy purple; and specimen plants of *Astrocaryum mexicanum*, and *Lantana rubra*.

Messrs. Lee, of Hammersmith, also sent Camellias, *Medinilla*, and *Boronia pinnata*; Mr. Catleugh, Chelsea, *Cytisus*, *Pelargoniums*, and yellow Azaleas; Lady Caroline Legge, a small plant of *Hymenophyllum tunbridgensis*; and Mr. Coysh, gardener to E. Wood, Esq., Rugby, three plants of *Dielytra spectabilis*, in excellent bloom; also, seven Azaleas, all in good bloom, one specimen grown as a bush, being particularly good. Accompanying these were two *Statice*s, and very good plants of *Adiantum cuneatum* and *pubescens*.

Mr. Kilminster, gardener to Mrs. Seaton Laing, sent three stands for dinner-table decoration; also, a flower-basket filled with white Azaleas, Camellias, *Deutzias*, and other spring flowers. Messrs. Lucking & Greeves likewise contributed flower-baskets, bouquets, &c. Lastly, from Mr. Meredith, came his Black Alicante Grapes still in excellent preservation; and from some one unknown some very good specimens of *Reinette du Canada*, *Blenheim Orange*, *Adams' Pearmain*, and other Apples.

HAYMAN'S REGISTERED ALBERT VASE FLOWER-BOX.

THIS newly-invented vase flower-box differs from the old flower-box in its capability of being taken to pieces, and the parts used separately as vases, or together as boxes.



These are by a simple contrivance attached together, so that they cannot be blown down. There is also another and far greater improvement in the mode by which water and air are admitted to the roots.



It can be used for decorating the table, hall, or can be placed on brackets, or in conservatories, in verandahs, or in-doors for flowers in the winter. The old form of boxes are too heavy to be removed readily, and are comparatively useless during the winter.

They have a very ornamental appearance, being made of zinc with ornamental plate glass, or Minton tiles placed in front, and japanned all round. They are calculated to last for many years, and are inexpensive compared to the old boxes.

CULTURE OF FIGS IN POTS.

I AM growing Figs in pots, in a heat of from 70° to 80°. The plants are small, but in 13 and 15-inch pots. How thick may I allow the fruit to remain? It is now on some branches as close as 3 inches. The Figs are about 3 inches in circumference—Brown Turkey, and White Marseilles. I cut through each terminal-bud as directed in your Journal (February 23rd, 1864, page 158), and I find some of the buds do not start again at present. Will the Figs on these branches without terminal shoots come to perfection.—C. P.

[You are growing your Figs in a great heat, and must give water in proportion; only let them once be dry, and the

fruit will fall. The Figs will swell very fairly without the terminal-bud. You must have nipped it through well back, as it has not pushed. We would take off a few Figs before the second swelling.]

ONION CULTURE.

IN the Journal of the 7th ult., under "Work for the Week," it is recommended in making Onion-beds to raise them 9 inches above the ground level. Surely this must be a slip of the pen? In light soil, with such a season as the last, it would be next to impossible to obtain a crop on beds of that description. As the system of growing Onions practised here has been very successful, I send you a brief description of it.

In the first place, I may state that until ten or twelve years ago the crop was annually almost destroyed by the Onion grub. To prevent this I have not found anything equal to charcoal, applied as follows:—Before sowing-time a quantity is pounded and sifted through a half-inch sieve; the quarter of ground intended for Onions is then well trodden; the drills are drawn 1 foot apart and 1½ inch more than the usual depth, which extra depth is filled up with the prepared charcoal, on which the seed is sown in the usual way. Since we adopted this plan, with one slight exception, the grub has not troubled us.

I do not claim the invention of this system. I have only improved upon the original, which I had from an old brick-layer who was noted for growing good Onions. His practice was to collect all his hedge clippings and other brushwood, to char them, and dig all into his Onion-bed. To this he attributed his success.—H. P., *Elsham Hall*.

[Mr. Keane directs the bed to be raised 9 inches to allow for the treading and rolling, which consolidates the soil.]

SATURDAY HALF-HOLIDAYS FOR GARDENERS.

WE think you have signed your somewhat rhapsodical and poetical letter very properly by appending to it "Youthful folly and discontent." There is such an amount of intelligence underlying it that we question very much if you have obtained much relief by "making a clean breast of it." We have no belief in reliefs in any trouble or difficulty unless they are based on what is just and right. With a sense of what is right as we think strong in your nature, we can hardly see how you could be otherwise than discontented with yourself, when in such a stormy afternoon you could make a cogitating stool of a reversed large flower-pot, instead of using your hands in the very simple work of picking discoloured leaves from bedding *Geraniums*. The work merely required a little of the eye and the quickness of the hand, and but little of the mind, so that you could easily have worked and thought on other matters too. You might have told "discontent" to be gone if you had just thought of poor fellows working out of doors. Our happiness depends more on the way we look at circumstances than the circumstances themselves. The advocates of improvements and reformations should show they are fit for and worthy of the improved position. What would never be advanced as a boon to "folly" may be freely given to prudence and integrity.

From what we have stated in answer to other correspondents it will be seen that we are no advocates for long hours of labour. We think it advisable to leave a little earlier on Saturdays, if possible, than on other days. Holidays themselves at times are very desirable, and are beneficial to employer and employed, and we believe all the more when not looked upon as matters of "right," but of mutual understanding. We have stated why in some cases Saturday would be the most unsuitable day of the week—otherwise if employers should approve of some of the men having some hours that day there could be no other objection. The time may come when there will be much shorter hours of work in all days, but that is not yet, and we must take matters as we find them.

Our correspondent wants to know why young gardeners cannot be treated to the Saturday half-holiday as well as

tradesmen and mechanics. Well! first because they are more servants than mechanics, and we hardly think the time has come when the gentry will neither ride nor drive on a Saturday afternoon, in order that grooms and coachman may not be disturbed. Secondly, because not bales of cloth, nor bars of iron, nor planks of wood, but in many cases tender living existences, demand the gardener's care, and would soon perish without it. On this account extra care and extra attention are demanded on the Saturday, in order to minimise, as much as possible, labour on the Sunday. We personally know of cases in which the attempt was made to let a part of the men away earlier on the Saturday afternoon, but it was found to be too hard on those who remained, and leaving all together an hour or so earlier was found to be more satisfactory.

Thirdly, if carried out, we do not see how visiting other gardens, a very desirable thing, and which our correspondent assigns as a reason, could be satisfactorily accomplished on such Saturday afternoons, when no more men would be employed than were absolutely essential to perform the necessary work. Who could pay the necessary courtesies to the visitors? Even now, without such holiday, visitors on a Saturday afternoon could scarcely come at a worse time, unless on a Sunday, and this latter we would, unless in very exceptional cases, wholly forbid.

Without speaking of head gardeners, we have no doubt

that all young gardeners who are industrious, prudent, honest, and attentive, will never be begrudged a few hours, or more at a time, to see other gardens on other days comfortably. Of course we do not include those who sit and think when they ought to work and think.

Here we would stop, without taking notice of the "want of will" of employers and head gardeners further than directing attention to the letter of Mr. Wills, page 244, so far in unison with our own ideas as expressed at page 234, but our correspondent alludes to "want of union amongst journeymen gardeners." We believe there is a hazy feeling of this kind afloat, but the sooner it is dissipated by the light of stern facts, like mists before the light of the sun, the better for all concerned. It is unnecessary to say a word on the right of combination, or the awful evils often flowing from the practical assertion of such rights; it is sufficient for our purpose to say that journeymen gardeners could do nothing in such a case by union, simply because other workers would soon willingly do, or try to do, what the journeymen refused to do. In one word, were even a general practice as to hours more uniform than now, the best plan would be to leave all such matters to the mutual agreement between employer and employed. The ventilation of the subject may help to lead to such an understanding as would combine, if possible, increased generosity on one side with increased faithfulness on the other.

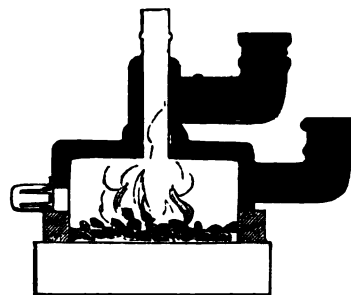
PORTABLE BOILERS.

ONE of the most desirable things that could be introduced would be some contrivance by which one could turn a piazza

from a nice shady summer promenade into a conservatory or winter garden at pleasure.



There would be no difficulty in doing this were questions of heating out of the way. There have been contrivances of the kind attempted, introducing the necessary warmth from heaters, but this kind of heat is never satisfactory to plants. If pipes could be so arranged as to be readily put together, and taken apart, and put away, one difficulty would be got over.



The boiler question, we think, could be settled by the use of Myer's portable boiler, of which the above is an illustration.

No doubt this idea could be still more perfected, as all first-hand inventions can. We have not seen one of the boilers in use, but judge from appearances it will be all its maker claims for it.—(*American Gardeners' Monthly*.)

FRENCH VERSUS ENGLISH ASPARAGUS.

MR. WATSON may relieve himself of any doubts he may entertain as to my good intentions. I never doubted his statements, nor had any intention of wounding any one, native or foreign. My opinion was asked as to the merits of Asparagus grown on the English and French systems, and having grown that vegetable on both systems in England, the opinion given was based on the results. These were: The heads grown on the French system were longer, entirely white, except the tips, and though 9 inches in length no more was eatable than a small portion of the growing-point; the Asparagus grown on the English system was not so long, was not so fine-looking, but more of it was eatable, and consequently it was in most request by the family; there were endless complaints about the Asparagus being woody so long as that grown on the French system was served, but it was pronounced excellent after being allowed to grow to the same length as ordinarily.

Perhaps Mr. Watson is not aware that the first shoots of Asparagus are much more tough than those produced later

in the season, and that forced Asparagus is much more tender than that grown in the open air. This may explain why French Asparagus can be more tender than English, and I have not the slightest doubt it generally is so, both being grown on the same system. What French Asparagus I have eaten has certainly been more tender than English-grown, but I never found any equal to that with but 2 inches of it uneatable. My experience is that but the upper 2 or 3 inches are eatable, therefore Mr. Watson has been more fortunate.

M. Carlos Forer's letter is simply an explanation of the reasons why we find French Asparagus purchased in Covent Garden, or at the hotels and restaurants of Paris, is not so good as that eaten where produced, he being so good as to admit that some amateurs even in France "maintain that that with green ends is preferable to the rose and white." That is precisely my opinion of that grown in England.

The reason French Asparagus is worth so much more in London is that it is several days, to say nothing of weeks,

earlier than our own, and being grown naturally is finer than our forced. Having a warmer climate it grows quicker, and it cannot but be more tender than ours.

Mr. Watson need not suppose me to be a professional horticulturist, but make sure of it. I have made my way in a garden since I was twelve years of age, having learnt from nature more than I ever did from man, and having gleaned a fact noted it.—G. ABBEY.

WINDOW GARDENING FOR THE WORKING CLASSES.

On Tuesday evening last a lecture on window-gardening was delivered by W. S. Bosanquet, Esq., to a very crowded audience of the working classes in St. Margaret's School-room, Westminster. The chair was occupied by Vice-Chancellor Sir W. Page Wood. After a few introductory words from the Chairman, Mr. Bosanquet commenced his lecture, which was sustained throughout by a fluent and graceful delivery on the part of the lecturer, and listened to with breathless attention by the large audience, who appeared to drink in every word as it fell from the speaker, testifying in no unmistakable way their interest in the subject. Mr. Bosanquet having expatiated on the advantages derived from the cultivation of flowers—its soothing and humanising influences on the mind, and its sure indication of a cheerful and well-ordered household, he proceeded to inform his audience of the great Show that is to take place in the garden of the Royal Horticultural Society at South Kensington on the 10th of July, to which an invitation has been sent to every parish in the metropolis to compete for prizes offered by the Society. He urged upon his hearers not to be discouraged because they might fancy that somebody else would be there with something that would beat theirs. If they did so they could never expect to attain to any degree of perfection in the cultivation of flowers; but their object should be to do their best, and concentrate all their attention on some common and easily cultivated flower which they found would succeed in the locality where they lived. It was not the rare and costly exotic that would take the prize that day, but a carefully-tended Fuchsia or Geranium, or some such flower.

The lecturer then went into the subject of cultivation, and laid before his audience very clearly and simply the practice they must follow for the successful growth of window plants. He began first with the flower-pot, and told them the first thing to be attended to was to see that the pot was perfectly clean, for flowers loved cleanliness as well as they did or ought to do; and the next was to see that there was sufficient drainage to the pots, for that was another condition that plants liked as well as human beings did. Then some very sound instruction on watering was given, instruction that many who consider they know something about the growth of flowers might derive advantage from. The maxim impressed upon them was never to give water unless the plant wanted it, and then to give abundantly. The plant never fails to give indication when it is athirst; the soil on the surface of the pots becomes dry, or partially so, and the leaves begin to hang down, and their cry for water is as loud, if we could hear it, as would be the cry of any individual in the audience if they too were in want. Then cleanliness was urgently brought before them. Mr. Bosanquet showed that plants could no more continue to live and to thrive if their leaves were covered with dust and dirt than could human beings if their mouths were stopped with putty. It behove them, therefore, to see that the leaves of their plants were kept perfectly clean by being either sprinkled with water or cleaned with a sponge. Then air was an indispensable requisite to plants, but care should be taken in giving air to plants in rooms not to keep them in a draught. The door and window should never both be open at the same time, for that was another point in which plants resembled themselves—they could not exist in a draught.

At the conclusion of the lecture several of the audience put questions, asking information on some details connected with the cultivation of plants in rooms and windows, which showed the strong desire they had to make themselves acquainted with the subject. Before the meeting separated the Vice-Chancellor made an application of the subject in a religious point of view, and reminded the audience of the

parable of the sower, which our Saviour delivered to his disciples, and after an impressive exhortation to the audience the meeting separated.

VINE-BORDER ON A CLAY SOIL.

I AM about to erect a vinery on a site where I am obliged to fill up to the depth of 4 feet for both house and border. The foundation is stiff clay, and I want to keep my Vine roots out of the clay. Would it be preferable to fill up the 4 feet with rough clinkers and cinders from a factory furnace, and make my border on this; or would you fill up with clay, and concrete above, and then make the border? If so, how am I to proceed, as I am ignorant of the process and material used for concreting? The border will be 34 yards by 4 yards, the size of the house.—T.

[In such a case we would prefer filling up 18 or 24 inches with clinkers, on these place some 2 or 3 inches of the finer clinkers and ashes, beat and roll well, so as to have a firm surface, and if not firm enough without, place a little of the clay among them at the surface. On this place 3 or 4 inches of concrete, made by mixing together three barrowloads of the roughest small cinders, three of rough pebbly sandy gravel, and one of quicklime, working it up quickly with just enough of water, and laying it down, smoothing it, and then rolling it, when it will become very hard. On that place about 15 or 18 inches of clinkers, and then 20 or 24 inches of soil. Have a drain below the concrete in front. We advise the above to prevent the roots going down through such a depth of clinkers.]

FROGS DESTROYERS OF WOODLICE.

INQUIRIES are often made for the best mode of destroying woodlice. I have never seen the employment of frogs advocated. They are quite as useful as toads, and more easily procured. They should be supplied with water, and unless food is abundant, should be occasionally fed with worms. Some of my poor frogs were starved for want of this knowledge.—B. A.

TRIOMPHE DE RENNES AND OTHER ROSES.

MAY I ask Mr. Radclyffe what stock his Triomphe de Rennes Roses are on? I cannot make it grow at all. It scarcely exists here. As soon as a shoot is made and has pretty well run its length, down fall all the leaves. I think I understood Mr. Cant, that he found it difficult to succeed though, I think he said, with Mr. Hedge, it flourishes admirably. Mr. Radclyffe speaks highly of Duo de Rohan and General Washington. Now, out of doors the former does not open one bud in twenty here, and neither in nor out of doors can I obtain one bloom in fifty of General Washington fit to look at; in fact, I shall throw both away after this summer, unless they do better than they have hitherto done.—P.

[Triomphe de Rennes, many trees, are on the Briar, and also on Manetti. It is an excellent doer. It is never out of bloom. It never has a blind end, or a defective bloom. The whole frontage of my house is lined with these excellent, ever-blooming, yellow Roses—namely, Solfaterra, Gloire de Dijon, Triomphe de Rennes, Celine Forestier, and Mdle. Aristide, the last is chiefly an ornamental Rose. A south wall is best for Triomphe de Rennes, but I have successful plants in advance of, and also against, a west wall. I have also most successful plants of it in my north-east garden, unprotected, on the Manetti stock. It does there equally well with Gloire de Dijon. All down my south fruit wall, I have trees of Gloire de Dijon, Triomphe de Rennes, and Celine Forestier. I have no better trees, and am never at any part of the season, beginning in May, till frost and snow set in, without a profusion of these noble yellow Roses. Triomphe de Rennes, on the Manetti, is all heights, from 6 to 12 feet high. It rarely suffers from mildew or blight. Taking all points into consideration, I believe it to be the best yellow Rose in existence. It is of the best quality, and if shaded, of a fine golden yellow. "P.'s" land is strong and cold. He must lighten his soil with leaves, ashes, or heath soil, and then Triomphe de Rennes will go a-head. Such trees require little pruning, rich soil, free drainage,

lots of water, and a West Indian sun. My trees fill the air with tea scent.

"P." complains that Duc de Rohan, Maurice Bernardin, and General Washington, do not open freely. That is their tendency. If he will throw up banks like those on which Thorn hedges are planted, put these Roses on the banks, and give them plenty of water in hot dry weather, they will open as easily as Safrano, though they be as large as a man's fist. Washington in character is a fall Rose, and does good service after others have done their work. The other two bloomed well in numbers last season on the flat. Still the Roses on banks beat similar Roses on the flat. I never saw finer Roses than the blooms of Duc de Rohan, Maurice Bernardin, and Charles Lefebvre, which is a free bloomer anywhere. Add Senateur Vaisse, also a free bloomer, and you have the four best crimson Roses in existence. The leaves of Triomphe de Bennes fall, probably, from the soil binding and want of water. Honeydew prevailed much last season. Did they suffer from this? As soon as you perceive it you must syringe it off before it becomes an immovable viscous concrete.—W. F. RADCLIFFE, Tarrant Rushton, Blandford.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

ALOCASIA LOWII var. *PICTA* (Variegated Low's Alocasia).—*Nat. ord.*, Aroides. *Lin.*, Monocotyledon. "A more highly coloured and variegated variety of *A. Lowii*."—(*Bot. Mag.*, t. 5497.)

LÆLIA PRESTANS (Admirable Lælia).—*Nat. ord.*, Orchidaceæ. *Lin.*, Gynandria Monandria. Native of the Brazilian island St. Catherine. Prefers a block of wood. Flowers rosy lilac, opening in November, and very durable.—(*Ibid.*, t. 5498.)

IRECINE HERBSTII (Herbst's Irecine).—*Nat. ord.*, Amaranthaceæ. *Lin.*, Dioecia Pentandria. Introduced by Mr. Herbst, Kew Nursery, Richmond, from the River Plate, South Brazil; but it is also native of North Brazil and Peru. It is a most striking coloured-leaved plant, the colours being intense plum veined with purplish crimson.—(*Ibid.*, t. 5499.)

AGLAONEMA MARANTÆFOLIUM var. *FOLII MACULATIS* (Variegated Maranta-leaved Aglaonema).—*Nat. ord.*, Aroides. *Lin.*, Monocotyledon. Native of Malay Islands. Leaves dark green marbled with greyish green.—(*Ibid.*, t. 5500.)

ACROPERA ARMENIACA (Apricot-coloured Acropera).—*Nat. ord.*, Orchidaceæ. *Lin.*, Gynandria Monandria. Native of Nicaragua.—(*Ibid.*, t. 5501.)

ACHIMENES.—*Pink Perfection*, rosy pink; throat yellow spotted with orange. *Grandis*, pale purple with orange, spotted throat. Raised by Mr. Parsons of Welwyn.—(*Floral Mag.*, pl. 233.)

VARIEGATED VERBENA.—*Popular*. Flowers scarlet; leaves variegated with yellow. Raised by Mr. Bull, King's Road, Chelsea.—(*Ibid.*, pl. 234.)

CHRYSEANTHEMUM.—*Golden Ball*, bright orange, with golden tips to the petals. *Venus*, lilac, with paler-tipped petals. Both raised by Mr. Salter, Versailles Nursery.—(*Ibid.*, pl. 235.)

BEGONIA DIGSWELLIANA.—Flowers light pink, with darker edges. It is in the nursery of Mr. B. S. Williams, Holloway.—(*Ibid.*, pl. 236.)

WAITZIA GRANDIFLORA.—This is one of the species of those flowers popularly known as "Everlastings." "It is very nearly related to the *W. aurea*, but is more robust, and has flowers considerably larger. The foliage, too, is so much less villous, that, when planted together, the species are readily distinguishable from each other by this feature alone. It blooms rather later than *W. aurea*, coming into flower when the latter is almost over. I received this fine species from Dr. F. Mueller, of Melbourne, but have reason to believe that, like the other species I have described, it is a native of Swan River. From its robust, tall habit, it is better suited to the open ground than to pot culture, agreeing in this respect with *W. aurea*.

"The treatment requisite for all the species may be concisely summed up as consisting of thin sowing about the middle of March; early preliminary transplantation to pots or boxes; close approximation to the glass, in a moderate temperature only, to prevent weak growth; and final trans-

plantation to the open ground in May, in the case of *W. aurea* and *W. grandiflora*, or to four-inch pots in the case of *W. acuminata* and *W. corymbosa*, with a subsequent shift, if found necessary. Both the latter may, however, be submitted to open-air treatment in light soils. In wet ones, or if exposed to heavy or long-continued rains, they are liable to die off without apparent cause. The treatment recommended is, in fact, simply that requisite for most of the half-hardy annuals; and, although it may appear to involve an attention to details which many amateurs are unwilling to give, it cannot be too strongly urged that any attempt to cultivate on the 'rough' system will infallibly result in disappointment.—W. THOMPSON, Ipswich."—(*Florist and Pomologist*, iv. 42).

WORK FOR THE WEEK.

KITCHEN GARDEN.

TAKE every opportunity of eradicating weeds, hand-weed where practicable, as it more effectually answers the purpose than hoeing and raking when the soil is moist. Out the Box-edgings, and keep the walks well rolled. *Basil*, a warm sheltered spot may be chosen to sow in the open ground, but being a rather tender annual, it is generally the best plan to sow in pans, or on a slight hotbed, and afterwards plant it out. *Beans*, earth-up the early crops, but before doing so lay a little soot close to the stems, as before recommended; timely earthing will also prevent the wind damaging them. *Borecole*, make a sowing for the first crop: what is commonly called the Scotch Kale is the best variety. *Broccoli*, most of the varieties may be sown in the end of the week; by sowing early there is time for a second sowing in case of failure. *Cabbages*, fill up any blanks from the reserved, at the same time stir the soil between the plants and earth them up. *Carrots*, thin-out those sown in frames, and give a good supply of water when dry. In sowing the main crops put in the seed rather thickly, as it is more liable to fail than any other kitchen-garden crop. *Celery*, the main sowing for the winter crop should now be made. Continue to prick-out from the early sowings, and pay attention to air and water. Clean and earth-up any that has stood the winter, as, if it is of no other use, it will do for soups. *Cucumbers*, keep a briek heat in the beds as the days lengthen and fine weather approaches, bearing in mind that light and heat should be proportionate to each other; give air daily, and keep the lights free from dirt. If green fly or thrips appear, recourse must be had to fumigation, which will generally extirpate them. *Lettuce*, give air to the plants in the frames night and day in mild weather, loosen the soil about those planted under hand-glasses. *Onions*, sow the Silver-skinned for pickling on a poor piece of ground. Plant into beds the autumn-sown or those sown in boxes in the early part of the year; draw shallow drills, and lay the roots of the plants in them at regular distances, after which cover them lightly with fine soil. *Peas*, sow any approved sorts for succession. *Radishes*, keep up a succession by sowing a few once a fortnight. *Sea-kale*, remove the covering immediately it is done with; if there is any yet remaining to be covered let it be done before it grows much. *Turnips*, thin-out those sown in frames, and give them water when necessary.

FRUIT GARDEN.

Complete the pruning and nailing of wall trees, and protect the blossoms. Remove suckers from Gooseberry bushes and from all fruit trees as soon as they make their appearance.

FLOWER GARDEN.

Repair displacements of soil or gravel on slopes or precipitous walks with as little delay as possible, for every shower will widen the channel. Gravel put on sloping walks should be almost in a state of mortar prepared for use; well trodden and afterwards rolled, it forms a hard and durable walk. It is often desirable to keep Ivy close to a building against which it clings; in that case it should be defoliated every year about this time, and it will again speedily be covered with fresh and vigorous leaves. Shrub-beries should now be gone over, pruning in encroaching branches and removing dead and dying limbs. The late heavy falls of snow have been by no means congenial to the roots of Tulips; in fact, unless the beds are situated on a porous subsoil or well drained, it is attended with posi-

tive injury. Particular attention must be paid to those whose foliage is cankered, cutting it away to the quick with a sharp knife. As soon as the beds are perfectly dry the surface soil should be carefully stirred. No time must be lost in getting the stock of Carnations and Pinks potted off. This is a good time to strike cuttings of Pansies; put them in round the sides of small pots, plunge in sand on a north border, and cover with a hand-glass.

GREENHOUSE AND CONSERVATORY.

See that nothing suffers from drought. The larger specimens in tubs or pots, if any, must have a liberal supply, provided the drainage is complete. This is the period for the free use of liquid manure, but take care that it is perfectly clear and not over-strong. Large Orange trees are very fond of it. Pay due attention to the watering, shifting, and stopping of plants in general. Many conservatories are very unfit places for Heaths, being generally too lofty and kept too warm for them. Some of the free-flowering varieties are, however, very ornamental, and should be largely employed in their decoration during the early months. As soon as they have done flowering let them be pruned back, and give them a liberal shift when they start into growth, using good fibry peat for the purpose, and if they are attended to in the growing season, they will overcome any injury they may sustain through occupying an unsuitable position while in bloom. As more than ordinary fires have been required of late in plant-houses, rendering the internal atmosphere drier than usual, the requisite humidity should be supplied by sprinkling the heating apparatus, floors, &c., at the same time keeping it below rather than above the usual standard for this season, to meet the present low temperature. Hardwooded plants, of which the pots are full of roots, and which it is not convenient to repot just at present, should be carefully attended to with water, for if allowed to flag many plants, particularly such as have fine hair-like roots, scarcely ever recover.

STOVE.

Much attention is necessary at this period to growing stock. Much progress may be made in a little time by a judicious course of culture. Shut up with a high temperature rather early in the afternoon, and use the syringe rather freely. Make cuttings as soon as they can be obtained, of *Geissomerias*, *Plumbagos*, *Eranthemums*, *Justicias*, *Clerodendrons*, *Vincas*, *Euphorbias*, *Brugmansias*, *Begonias*, *Thunbergias*, &c., in order to keep up a succession of clean young stock. See that growing Orchids have abundance of atmospheric moisture with a liberal circulation of air early in the morning, shutting up close betimes, and taking care to observe moderation in the use of fire heat, in order that a pure atmosphere for the night may be insured. Growing *Dendrobiums* will now require liberal supplies of water, and let the plants on blocks be frequently syringed.

DUNG-BEDS FOR VARIOUS PURPOSES.

At this period it is of much importance to have a dung-bed or two of a very moderate degree of heat for the purpose of cooling down fresh-struck cuttings, hardening annuals, and receiving plants from either the stove or greenhouse; for in consequence of liberal shifts in these departments and the rapidly increasing size of the *Pelargoniums*, *Cinerarias*, *Calceolarias*, and *Fuchsias*, something must be removed, and a cold frame is insufficient for some of these tribes. Let, therefore, any spare frames at command be fitted up, using a little well-wrought dung, with a good deal of tree leaves if at hand. A steady bottom heat of 70° will be sufficient, and very little material will suffice to produce this, if some coarse litter of any kind be packed closely round the frame after the bed has been formed. Such frames should be watered with scalding water as soon as a little heat is up, this will destroy insects and their eggs. A coating of ashes may then be spread over the bed, and the frames matted up at night for two or three weeks, leaving a little air all night to plants hardening off.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Plenty of snow on Tuesday and Wednesday, but a south wind on Thursday, from which we fondly hope that gentle April will come to us, and bring sunshine and mild breezes.

Very little has been done on the ground out of doors. The snow has acted as a protection from the keen frosts; and most fruit-buds are so backward that but little harm would be done if the birds would only let them alone for a few weeks. Stirred up the surface-soil among forward Peas in pots; watered with warmed water some of the Tom Thumb kind, planted out in orchard-house. Put a few Sangster's No. 1, out of turves, thinly in the front of the house; and these we will allow to ramble a little, and stop when the shoots show a few flowers. Turned out turves with Peas sown in them, placed among forward Potatoes, as they were beginning to be too forward, and placed them in a turf-pit, where a little protection can be given them, until the weather become more mild. Turned out a lot of Cauliflower from pots into an earth-pit, where a little protection can be given them. Stirred up the soil among those under hand-lights, and protected with a little litter in the frosty nights, as we wish them to go on now without check—a check from hardening them with frost now being apt to make them button prematurely. Removed the glass from those in frames, and covered in severe nights with hurdles having spruce branches drawn through them.

All these doings make lots of litter, but at this season it is hardly possible to combine the extreme of neatness with the extreme of economy, and a little roughness may well be excused when the object and the utility are at once perceptible. To keep all neat and orderly round lots of earth-pits, &c., would now be almost as endless and expensive a job as washing an Ethiopian white. Those who make neatness an object, must go to the expense of covering that makes and needs no litter.

Took up a little more Sea-kale and Rhubarb, and to secure variety, put some Swedish Turnips into a dark warm place. When the tops have grown 6 or 7 inches in length, though yellow, they make a dish fit for an epicure. Made another piece of a Mushroom-bed, having taken the old out. All our pieces have done first-rate, except a bit that should be coming in now, and that is behind its time; and we are a little doubtful of it, as the material was too old, and too wet, and would have been benefited if a truss or two of dry straw had been cut into one and two-inch lengths, and mixed with it. The next piece will, however, soon be in, and the older pieces yield gatherings.

A good portion of the time has been occupied in covering and uncovering, making tallies, sharpening sticks, washing pots, and putting them clean in bins, where, however, their stay will be short at this season, and cleaning and mending glass, &c. A little management will always secure plenty of such work in bad weather; and it is ever the reverse of economy to have men working out of doors in wet weather, to say nothing of the unkindness and inhumanity of making them do so. We shall never forget how a foreman led us mowing on a cold wet day in the end of autumn, until we might as well have been dragged through a river, every advancing step we took sending the water gurgling over the tops of our shoes. He could change his clothes, and have his wet ones dried in his room, but nearly all the rest had to go a good distance to cold fireless lodgings, and consider themselves well off if their clothes became dry in several days. We noticed then what we have often noticed since—that after such a water bath the men went about their work for some days afterwards as if they had neither life nor energy for it. That day's work we always regarded as a direct loss, instead of gain, to the employer.

FRUIT GARDEN.

Much the same as last week. Have done nothing out of doors to speak of owing to the weather, as we had protected Peaches and Apricots even before nailing. The work will come all at once; but we have no doubt there will be every alacrity to carry it out. Tied up Vines, regulated shoots, and drew a dry hand over the bunches coming into bloom. In some cases held a sheet of paper below the hand to catch any pollen, and threw that, or placed some on the hand which we drew over irregular settlers, as Sweetwaters and Muscats. In such a house the night temperature has averaged 60°, and the midday temperature, without sun, 70°, with sun up to 75° and 80°, and little fire heat if there was plenty of sun. A very little air was only given at the top of the house, and even that little would have been less but for Strawberries.

In a small pit, the earth part being about 3 feet in width and 15 inches deep, we have an extraordinary show from Vines that were put out last season and cut down. We know very well if we allow the half or the quarter of the bunches to remain, the Vines will be pretty well exhausted. In the same pit, but in three lights separated by a division, are old plants of Sweetwater which have borne heavily for a great number of years, and have just the same amount of soil, which we think must now be somewhat exhausted. These also seem a mass of bunches, though not large. Below the soil, among clinkers, are two small pipes for hot water, but we have not top heat enough to bring the Grapes in very early; but when we have it, we have no doubt that, in these six-feet-wide pits, we could have early Grapes very economically, as the glass could be easily covered at night. These Vines are now somewhat crowded, and we must clear the pits somewhat to give them room. First, there was a mixed collection of plants as soon as the Vines were pruned; then, as soon as the Vines began to move, a rough stage was placed across it for Strawberries, and, beneath the stage, seeds of Lobelia, &c., were sown in pots, and covered with squares of glass. The seedlings, when fairly up, were removed to where they could receive more light; and now we must move a good portion of the Strawberries, to obtain full light and room for the Vines. This is a specimen of the cramming mode which has to be resorted to in many cases, and which, whilst it makes the most of glass space, greatly increases the labour, and keeps the eye and contrivances of the gardener constantly at work.

We have noticed a few more of the brown beetle on shoots in the Peach-house, and of course did not see them long. Our young man thinks nothing is so effectual as soft soap water, and so long as it is used weak enough not to injure leaves or young fruits we have no objection to its use. It is always a good plan to adopt measures that are even thought to be best, and hence one man will make a mode answer perfectly when another man entirely fails with it. It is but natural for us to like our own plans best. A man has a peculiar mode of doing a certain job, which he is convinced is the best mode, and at least he does the work well. You may think another mode would be better, and say so, but if you insist on going against the man's conviction you will not be much of a gainer thereby. Every good workman, be he even a garden labourer, has pet ways and methods of his own, and if these do not go to the extreme of interfering with general order and arrangement it will generally be best to let him work in his own way. Provided we never catch a sight of this ugly brown beetle we shall be very careless as to whether we owe the riddance to soap water, tobacco water, quassia water, or any other water. We fully believe that an attentive eye and an active hand are, after all, the great securities against all such pests.

In the first orchard-house, where an iron stove had been a little used last season, two trees in the centre are coming into bloom notwithstanding all our care with air on, except in severe frost, to keep them back. The other house will not open just yet. As a further security against fly and beetle we purpose syringing all trees of which the buds are not opened with a liquid consisting of about 1 lb. of Gishurst and 1½ lb. of soft soap, and a little sulphur and lime water, mixed up in thirty gallons of water. We shall also let a little fall on the floor and pots. We should not like to use it stronger at this season, and we will put it on very gently, so as not to displace the painting round the swelling and now opening buds. Last season, though but little troubled, we detected by this time some of these beetles running races on the tops of the pots, so that most likely, in addition to the syringing, we shall paint the parts of the pot above ground with some nasty substance which will not dry fast, such as soft soap. Any little trouble now that will keep such enemies from appearing during the summer will be advisable. We saw but little of this beetle last summer, and hope to see less this season, but of all pests in a garden it is the very worst—green fly and even red spider are a trifle to it.

ORNAMENTAL DEPARTMENT.

Chiefly potting, making use of stokeholes with sheds over them for the purpose. The potting was chiefly confined to Gloxinias, Gesneras, Caladiums, &c., and to potting and

turfing faggots of bedding Geraniums. The fine-foliaged Begonias, Gloxinias, &c., were set on a stage, where they would be well shaded by the Vines. It is better, however, when they are not placed there until after the Vines are done flowering, as the smallest particle of extraneous matter, be it the flowers of the Grape or a bit of decayed leaf, resting on the leaves of these fine-foliaged Begonias for a few hours, or even less, is sure to make a hole in the fine leaf; they do best, therefore, in the shade where nothing can drop on them. As to the faggots of Geraniums, we described how they were closely packed in 10 and 12-inch pots in the end of autumn. We have just now filled four lights of a six-feet-wide pit with plants in 60-sized pots, taken from some dozens of pots of 10 inches in diameter, stuffed with Bijou. Hardly one had failed out of very nearly four hundred. These did not require a tithe of the attention during winter that small fresh-struck plants did. We like in general to pot or turf the variegated ones, though Bijou and Alma lift very well from an intermediate bed of rough earth and leaf mould. These old plants are rather top-heavy for the turfing process. We resort to it because scarce of pots, and also for saving labour afterwards. For small plants struck late in autumn from 3 to 3½ inches square of turf and from 2½ to 3 inches thick will be quite sufficient. The tougher the turf is the better. If we take it up 12 inches wide, it is cut on the bench into square pieces with a sharp hand-bill, and then the earth part being placed uppermost, a hole is scooped out nearly to the grass with a knife, and about as quick as pots can be brought and drained. A little nice light soil is put in the hole with the young plant, and if a little bottom heat can be given the roots will soon be hanging like hairs round the sides of the pieces of turf. When turned out in beds the turf goes along with them, and this is found to be an advantage if you wish to lift with anything like a ball in autumn. Without any bottom heat, those who are afraid to plant out of earth-pits at once, or who cannot afford time to water pots, may try the turf system, placing the bits close together on the bottom of a pit or frame, or on the floor of a late vinery or Peach-house.

Proceeded also with cuttings of Verbenas, and whatever else was likely to be wanted. To oblige some inquirers we will here shortly allude to a few matters very simple but very important to success.

1st. All cuttings of such plants strike most speedily in sweet bottom heat—that is, if placed on a sweet hotbed, though Geraniums and many other plants will strike as well on a shelf as anywhere.

2nd. All cuttings will strike quicker if there is the beginning of spring growth on them before they are taken off.

3rd. The cuttings should never flag or be wetted before they are inserted; and as soon as inserted they should be taken at once to their position, so as to prevent any flagging afterwards.

4th. The success as above will greatly depend on keeping the cutting that has commenced to grow on the parent plant still growing slowly, as when separated from it; and the best securities for this are additional heat, a close moist atmosphere, a little air at night, and just as much sunlight as the cuttings will bear without flinching, and then, if the sun distresses them, a little shade or a skiff from the syringe.

5th. Bear in mind that shade is a necessary evil, tending to weaken and enervate plants and cuttings, causing the latter to elongate upwards instead of rooting downwards, and thus wasting the stored-up supplies instead of supplying the plant with new sources of vigour. As little shade as possible should be given, removing it, not at the approach of night but as soon as the sun is clouded.

6th. As giving ease every way, the propagating of all bedding plants at this season will be best effected if the cuttings are placed about 20 or 24 inches from the glass. With the use of the syringe in sunny days little shading will be needed unless in very bright sun, as the force of the rays is broken before they reach the cuttings.

7th. Light sandy soil with abundant drainage is best for striking. A very little very rotten leaf mould, or heath soil, may be added, but leaf soil at all rough and fresh is apt to produce damp and mouldiness.

8th. These things kept in mind, it matters not a pin what the vessels for cuttings are, whether pots or pans, soft or

hard-burned, semicircular tiles, old tin and zinc spouting, or old worn-out evaporating-pans of similar metals, especially zinc.

9th. The chief time that such cuttings, without the help of bell-glasses, hand-lights, &c., but exposed in the bed, need syringing, &c., is in the middle of sunny days, when the evaporation of their juices is going on at the greatest rate. If such a skiff from the syringe will do, it is a much better practice than shading.

10th. All cuttings, of which there is a doubt of any insects being on them, should after they are made be drawn in little bundles through tobacco water or quassia water, holding the ends in the fingers, so that the cut ends may not absorb much or any of the liquor.

11th. In making the cuttings, remove the leaves at the lower joint, cut clean across through the node, or just below it, and if you remove no more leaves, shorten and lessen the larger ones. We have little faith in raising such plants as Geraniums from leaves, though the leaves will make roots. To obtain plants we should like the leaves to have as much of the stem as would include a bud at its axil. That, however is just a cutting. Plants that make tubers and bulbs may be raised from leaves, as Gloxinias, Gesneras, Begonias, &c.—R. F.

COVENT GARDEN MARKET.—APRIL 1.

Out-door vegetables, in consequence of the late severe weather, are only brought in limited quantities, and Asparagus, Kidney Beans, and other forced vegetables, are no more than equal to the demand. Continental supplies, however, have improved. New Potatoes are to be had at from 2s. 6d. to 3s. per pound. Apples are still brought in large quantities, among the best for the season at present are Court-pendu-Plat, Golden Winter Pearmain, Golden Harvey, and Nonpareil. Of Pears the supply is small, the kinds being Easter Beurré and Beurré de Rance; Pines scarce; Grapes sufficient for the demand. Forced Strawberries consist of Keens' Seedling, Carolina Superba, and Black Prince. Of Broccoli there is hardly any to be had.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	2	0	4	0	0	0	0
Apricots.....	dox.	0	0	0	0	0	0	0	0
Cherries.....	lb.	0	0	0	0	0	0	0	0
Chestnuts.....	bush.	14	0	20	0	0	0	0	0
Filberts.....	100 lbs.	40	0	0	0	0	0	0	0
Cobs.....	do.	50	0	60	0	0	0	0	0
Gooseberries ..	½ sieve	0	0	0	0	0	0	0	0
Grapes.....	lb.	15	0	30	0	0	0	0	0
Lemons.....	100	5	0	10	0	0	0	0	0
Melons.....	each	0	0	0	0	0	0	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	each	0	4	0	6	0	3	0	6
Asparagus.....	bundle	8	0	14	0	0	0	0	0
Beans Broad.....	½ sieve	0	0	0	0	0	0	0	0
Kidney.....	100	2	6	4	0	0	0	0	0
Beet, Red.....	dox.	2	0	3	0	0	0	0	0
Broccoli.....	bundle	0	0	0	0	0	0	0	0
Brussels Sprouts	½ sieve	3	0	4	0	0	0	0	0
Cabbage.....	dox.	1	6	2	0	0	0	0	0
Capoteams.....	100	0	0	0	0	0	0	0	0
Carrots.....	bunch	0	7	0	10	0	0	0	0
Cauliflower.....	dox.	2	0	6	0	0	0	0	0
Celery.....	bundle	2	0	3	0	0	0	0	0
Cucumbers.....	each	1	0	4	0	0	0	0	0
Endive.....	score	2	6	3	0	0	0	0	0
Fennel.....	bunch	0	3	0	0	0	0	0	0
Garlic and Shallots	lb.	0	8	0	0	0	0	0	0
Herbs.....	bunch	0	3	0	0	0	0	0	0
Horseradish ..	bundle	2	6	4	0	0	0	0	0

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

STRAWBERRY-HOUSES (Mr. K.).—The subject, we think, has been enough discussed.

SUBSCRIPTION (C. E.).—We think that by the charter and bye-laws of the Society you are legally bound for this year. On paying your subscription the Secretary will send to you your tickets.

MIGNONETTE TREE.—"M. D." will be very much obliged by any information respecting the Mignonette tree, a shrub which grows to a very large size in India, the flowers and scent similar to our common Mignonette, with the addition of sharp spines upon its branches.

TEMPERATURE OF VINERY (W. J. Watson).—The keeping-year Vines to 55° until they broke had reference chiefly to the artificial heat by night. In such a case in a rather dull day, you might let the temperature of the house rise to 60° or 65°; but with sun heat you may let it rise to 70° or 75°. When you expect the sun to shine brightly you should let your fires low, and then you would not require to send such streams of cold air through your house. Fire heat and sun heat act very differently. See "Doings of the Last Week" lately.

CENTAUREA CANDIDISSIMA GRUB-EATEN (Ignoramus).—The grubs were too much destroyed to enable us to determine their species. We would give the plants a good soaking, then syringe them well with clear lime and soot water; and if that did not settle the grubs we would cut off the large leaves affected, as, to all appearance, the plants will be strong enough to push out plenty of healthy young foliage. Unless for specimens in pots, the plants will be none the worse of a partial disleafing.

REMOVING VINE LATERALS (J. Mackenzie).—We would not lessen the laterals until the fruit was colouring, and we wished to ripen the wood; but if you want such large bunches you must be content with something like half of what you are now taking. Such heavy crops, also, in time exhaust the Vine. In the rods so thickly studded we should think a bunch every 15 or 18 inches would be ample, or even fewer, if fine specimens are desired. We are greatly pleased to hear of such success in a large span-roofed house so far north as Inverness. What fuel do you burn?

ASPECT FOR CONSERVATORY (J. D.).—All things considered, the south aspect will be the best. You can keep the house cool by plenty of air. We would advise rough plate for the roof, and then you would only require blinds for the front. You might even daub the lights in front with milk and a little flour in the end of May, and wash it off in October. The site will be of great use in winter. You may have the Vine on the roof, and if you trained it in front, in summer it would do instead of shading. An east or west aspect would do very well. A north one would save all these drawbacks, but the plants would not grow well in it. You would have to bring them in to bloom, and then remove them to be grown elsewhere.

FUCHSA GRAFTING (An Amateur).—The Fuchsia may be grafted at any time, and almost in any manner, when heat, moisture, and a little shade can be given, and the wood used is thoroughly ripened. In such a case as yours, with merely a cottage chamber, with the window facing the south-west, the following will be aids to success:—The stock should be beginning to grow, and be in advance of the scion in growth. The scion should just be breaking its buds, and the wood should be well ripened. Young wood will do very well if pretty strong; but when we used to graft we often used some 2½ inches of a young shoot, with about 1½ inch of the older wood behind it, making a slice long enough in the side of the shoot to place the old and part of the new wood on it. The slice from stock and scion must be taken off with a clean sharp knife. Tie carefully with bast, daub with a little clay, cover with a little moss, and damp that frequently.

PLANTING FLOWER-BEDS (Gertrude).—We had answered your last letter before receiving the present. We think the flower-beds are in their right place. We also think that your arrangement will be improved, and be more in unison with the quaint-looking character of the house, by your substituting the central figure in the plan, p. 232, on each side, instead of the group of diamonds; but then of course your great diamond in the centre is quite out of character. You might make the diamond about half the size, and, instead of joining the points, leave about 2 feet of an opening, and have a circle at each point. Your simplest plan would be to make a central figure much the same as your two sides, and then take a lesson for your circles from the end of these cross figures, giving the circle four bends instead of three, something in the same way, but with bolder sweeps than shown in fig. 16 in the plan at p. 214. The central figure or group we would then fill with scarlet, white, and blue. This arrangement would not give you a regular group, but there would be a fitness and fitting-in of one clump to another which your present plan lacks. You will find much to help you in the able criticism of the two plans referred to, and remarks on that criticism in the present Number.

GROWING ATRIPLEX RUBRA (C. M. C.).—We think you will have a more regular row of the Red Spinach by sowing under protection, and planting out when a few inches high. It does very well, however, when sown about the middle of April where it is to remain, and if there should be a few vacancies you can easily transplant some from where the plants are too close together. When all the plants are transplanted from a bed the line will come more uniform, and the transplanting helps to make the plants more dwarf and bushy.

HEATING A SMALL LEAN-TO GREENHOUSE (G. T. C.).—Your best plan would be to have a small flue below the floor, as described by Mr. Fish several times. The cheapest would be a small iron or brick stove, with a pipe leading out of the house, or into another chimney; the first is best. See answers to correspondents a few weeks back. For such a house we would have a foot shelf, or more, in front, a two-foot path, and a stage 8 feet wide behind; or you might have the path down the middle, and a three-foot stage on each side.

PROPAGATING LILIAM GIGANTUM (E. Cooke).—This Lilium is propagated by taking off the young suckers, which come plentifully around the old stool at the time of potting, potting them singly in pots sufficiently large to hold them comfortably, and growing them on in a cold-frame or greenhouse. This is best done early in February, when they are on the point of starting into fresh growth. Turfy loam from rotted turves one-half, and the other half equal proportions of turfy peat, leaf mould, and sharp sand, well chopped and mixed, but not sifted, make an excellent compost for this, and, in fact, all the Lily family.

GRAFTING CAMELIAS (S. W. C.).—April is a good time to graft them, the scion being taken from plants not in active growth, the stock placed in a temperature of 55° from fire heat, and the pot plunged in a hotbed a week prior to the date of grafting. The stock is best not headed down quite close to the scion at the time of grafting, but it should be shortened to a few inches above the graft, to attract the sap into the graft; and by shortening in part forcing it into the graft. After the graft has taken, it is necessary to cut the part of the stock above the graft quite close to the union. Your young stocks may be grafted when they are equal in thickness to that of the grafts.

SENDING SKINS, &c., BY POST (A. L.).—If you take Lettis & Co.'s van, excellent and useful "Monthly Postal Almanac," printed, it will tell you the days the mails are despatched, the postage, &c.

VINES BREAKING—STOPPING BLEEDING IN VINES—TEMPERATURE FOR ASALEAS AND CAMELLIAS (E. C.).—When Vines are breaking they should have a temperature of from 43° to 60°, and be sprinkled morning and evening with aded water. When they break the temperature should be increased to 60°, in another fortnight to 55°, and when in leaf it should be increased to 60°, with a rise of 10° by day without sun, and from 15° to 30° with sun and air. The bleeding of the young Vines may be stopped by searing the ends of the rods with a red-hot iron, and then dipping the ends in boiling pitch. If pruned quite close you will lose the uppermost eye by this process. The cause of bleeding is pruning too late or not soon enough. Do so in future immediately the leaves have fallen. A temperature of from 55° to 60° is proper for Camellias and Asaleas to make fresh wood, and a moist atmosphere.

CRANUM TOMENTOSUM FROM SEED (J. C. N.).—Prick off the seedlings an inch or two apart in boxes, grow on in a frame or greenhouse until May, and then harden off, planting out in May or early in June. It will make a nice edging this year by August.

COCEA SCANDENS VARIEGATA CULTURE (G. B.).—Sow any time in April in pots filled with any kind of light soil not pressed in too tightly. Sow thinly. The pots should then be partially plunged upon a genial warm bed. You lost your young plants by allowing them to remain in the seed-pots so long after they were up, and there was not sufficient heat for them after they came up. On the second day after they were up they should have been pricked off into fresh soil, taking care that it was quite as warm as the soil they were growing in. If 48 size pots were used for the purpose, ten or twelve plants should have been pricked in around the edge of the pot; then after they had made the third pair of leaves they should have been potted singly into small pots. Want of early attention to the pricking out young seedling plants is the cause of so many complaints of nurserymen supplying bad seed. After pricking out the plants they should be placed in a temperature of from 70° to 75°. After the second potting the temperature should be reduced to 55° or 60°.

LAPAGERIA ROSA CULTURE (Idem).—It may be sown at once in a mixture of peat, leaf soil, and silver sand. Before sowing the seed it should be steeped for six or eight hours in lukewarm water or milk. The seeds should be sown thinly in pots or pans, taking care that the seed is at least 2 inches below the surface of the soil. The pots should then be placed in a warm greenhouse or pit, where the temperature would range from 45° to 60°. As soon as the young seedlings appear they should be potted singly in small 60-pots, and placed in a close pit or frame for a week or two till established in their fresh quarters. They should then receive the same treatment as greenhouse plants; but after they have become strong enough to bear it, they will require abundance of water.

STRINGING GERANIUMS—LANKY SPECIMENS (Agnes).—Do not syringe Geraniums and Pelargoniums at all in these cold, cloudy, frosty mornings—that is to say, if you have excluder frost. In fine sunny weather you may syringe Scarlet Geraniums if you like; but not Pelargoniums, florist or fancy, should meet the sun with wet foliage—it is a fruitful source of spot, &c. The damp will do no harm to the Vines that will now, we presume, be beginning to break; but as they progress a drier atmosphere in dull weather will be desirable, or you may have mildew. As you do not care about cuttings it would be as well to leave your lanky Geraniums alone, and plant them in the centre of beds. At this early season, and with your greenhouse vinery, if you wished nice plants for dwarf beds, we would cut them back some 6 or 8 inches from the pot, as no doubt they would break well, or you may plant obliquely in May; but recollect what Mr. Fish said last season as to how such exposed stems were so much more liable to be injured by frost than those that stood upright in the usual way. We think your black turf or peat used for burning would be too expensive for cutting up to make turves for bedding plants as a substitute for pots. Some peat so sold is rather sweet, but a good deal is so astringent that the plants would not root well in it. See the subject alluded to again in "Doings of the Last Week" of to-day.

INSECTS DESTROYING FUCHSIAS (E. H.).—The insects doing this mischief are the young larvae of one of the field bugs (Phytocoris sp.). Their habits are quite similar to those of the aphides, except that they do not breed so rapidly and remarkably. They must consequently be treated in the same manner as the green fly.—W.

APRICOT SPRAY (J. H., Todmorden).—The branches, or rather spray, of Moor Park Apricot which you sent have no fruit-buds on them. The wood is not sufficiently ripe to produce fruit-buds. We should think from their appearance that the trees from which they were taken had been summer-pruned, and that the branches you sent had grown after midsummer. This is often practised, and the loss of the crop to a great extent is the consequence. This plan is often resorted to for the sake of new trees. As few as possible of the first shoots should be cut or stopped; they should be laid in, and the principal pruning should be left till the winter. A western aspect is more suitable, and where there is a good circulation of air the trees should be planted very shallow. The soil most suitable for them is a strong loam. We shall shortly enter more fully into the proper details necessary for the successful cultivation of the Apricot. We should think the trees in the orchard-house have not been sufficiently exposed during the past summer and autumn. The pots should be placed in the most exposed positions after the crop of fruit has been taken from them.

NAMES OF PLANTS (A Broadlyre Subscriber).—Apparently Begonia scandens, but the specimen is insufficient.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending April 1st.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun. 26	29.674	29.272	41	24	41	41	N.	.04	Cloudy and cold; stormy; with snow showers; frosty.
Mon. 27	30.073	29.978	44	19	40	40½	N.	.00	Cloudy, with intervals of clear blue sky; fine; sharp frost.
Tues. 28	30.049	30.021	44	28	40½	41	N.W.	.00	Hoar frost; fine; overcast; snow. [at night.]
Wed. 29	30.091	29.999	46	23	40	40½	E.	.14	Snow in broad flakes; depth about 2 in.; overcast; frosty at night.
Thurs. 30	30.236	30.225	50	25	40	40½	W.	.00	Clear; very fine; fine at night; frosty.
Fri. 31	30.210	30.074	57	42	41	41	S.W.	.07	Fine; very fine in forenoon; overcast; rain.
Sat. 1	30.058	30.019	56	24	43	41½	S.W.	.00	Uniformly overcast; snow-like clouds; fine; frosty.
Mean	30.056	29.941	48.29	28.43	40.79	40.86	.....	0.25	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE APPOINTMENT OF POULTRY JUDGES.

As no one has attempted to disprove any of the statements contained in my former letter, I think it will not be out of place in me to ask the members of the Poultry Club if they think it right, considering their rule prohibiting any dealer from judging, that one of the most extensive dealers in the country should continue to hold the office of Steward. In justice to the dealers excluded by this rule, this gentleman ought to resign his office; and I have no doubt that he will immediately do so, for he must see that his continuing to appoint the judges is virtually a breach—it may be an indirect one, but it is still a breach—of the very rule he professes to uphold.

The gentleman to whom I refer is Mr. Henry Beldon, who advertises that himself and daughter are the owners of the most successful poultry-yard in the kingdom. Now, when it is considered that the daughter is a child—I believe not more than ten or twelve years old—it becomes pretty evident that her ownership of the yard is, to say the most of it, merely nominal, while Mr. Beldon is the real exhibitor of the birds, although the catalogue often states Miss E. Beldon. (I have no idea what object he has in showing in his daughter's name. It is a ridiculous practice; but even this, like other ridiculous practices, has found its imitators). This circumstance is an additional reason why Mr. Beldon

should give up his Stewardship; for, should he continue to hold the office, ill-natured persons may say that the reason why his yard is so successful is because he is one of the persons who appoint the judges. Now, whether such is the case or not, it would not be altogether pleasant, and I think Mr. Beldon will do well to avoid it.

There has been a great deal said at various times about the best method of choosing a poultry judge, and many suggestions, both good, bad, and indifferent, have been made; but none worse, nor so bad by a long way, as the one now adopted by the Poultry Club.

Can any one give a satisfactory reason why two or three interested exhibitors should appoint the judge for a show, numbering, perhaps, hundreds of exhibitors, in preference to the gentlemen who have had all the trouble and expense in getting up the show, and whose interest it is to see that the prizes are awarded fairly, in order to secure the continued support of the main body of exhibitors, on whom it may be said the society depends for its very existence? But I would have all committees introduce into their schedule a rule which I see has been wisely adopted by the Beverley authorities—"That no member of the committee be allowed to compete for prizes." If poultry committees would only appoint the judges themselves, and obstinately refuse to receive any suggestions on the subject from Poultry Club, Club steward, exhibitor, or any other person, it would be by far the best plan they could adopt, and the one most likely to inspire exhibitors with confidence, and insure a continuance of their support.

With regard to Mr. Douglas there can now be only one opinion, when it is considered that, besides having the birds claimed in his name, he also received the money produced by the resale of the birds, minus a small amount owing to the purchaser for prizes.—A LOOKER-ON.

POULTRY AND EGG COMPANY.

By nature I am a timid and cautious man, and dread to see my opinion appear in print, I feel, however, I must make an exception in favour of Mr. Geyelin, whose interesting articles on poultry-breeding, published in your valuable Journal, I have read with much pleasure and advantage. For some years past I had an idea of breeding poultry on a large scale, but the dread of becoming the laughing-stock of my neighbours in case of failure has hitherto deterred me from doing so. When I saw the advertisement in your Journal for the formation of a Poultry-breeding and Egg-preserving Company I determined to come up to London and see Mr. Geyelin, with a view to elicit full particulars, as I consider that such a company would, if formed, supply me at a trifling risk with such practical information as I could not expect from personal experience at a much greater outlay.

Mr. Geyelin has very kindly explained to me his plans, his mode of keeping accounts, and feeding. In fact, he has given me such ample and satisfactory explanations that I feel in justice bound to say that if ever a plan appeared to me feasible it is that of Mr. Geyelin. The solution of the problem whether poultry can be bred as profitably in England as on the continent is of national importance; it behoves, therefore, all persons who take an interest in poultry-breeding to contribute to some extent towards the expense of making the experiments. I, for one, subscribe for ten shares of £5 each, and let the result prove even a failure I shall still consider it a good investment, as it will have been the means of obtaining at least some valuable information; but should it, on the other hand prove a success, it will confer a great benefit on the country. There are opportunities in life which, if allowed to pass, may never present themselves again under such favourable circumstances. At the present moment there is a gentleman, not only willing, but able, to make the experiment on scientific principles, and whose statistics, if kept according to the plan I have seen, will be so precise as to become most valuable to every poultry-breeder. If we lose this opportunity shall we ever have the like again?

In conclusion I must add that I felt very much surprised at Mr. Geyelin's reply to my question whether all the shares had been subscribed. I give his own words:—

"I was induced to incur the trouble and expense of promoting the formation of this company by many gentlemen who offered to take some hundreds of shares, as you will perceive by those letters, but to be candid, I have, as yet, had application for a hundred shares only, although upwards of three hundred prospectuses have been applied for, and unless I receive more public support the matter must fall to the ground."

Shall it be said that Englishmen are so little enterprising that we prefer to purchase in foreign markets rather than ascertain at a trifling individual expense whether we cannot supply our own wants in the shape of eggs, poultry, and rabbits?—A SUSSEX FARMER.

SUFFOLK POULTRY SHOW.—The Committee have made a liberal prize-list this year, and augmented the number of classes. The Brahma Pootras are divided into two classes—light and dark—and a silver cup is offered for the best. An extra silver cup is also given for a Game class. The Ham-burghs are this year divided into four classes—last year there were but two. A "Selling" class and a Pigeon class have also been added. The Committee, we are told, received high commendation from exhibitors last year for the care taken of the birds, and their promptness in despatching them home again.

My SILVER PHASANT laid on Sunday the 26th for the first time.—H. R.

MR. DOUGLAS.

I SEE by your last Number that the "TIMID EXHIBITOR" has at length found courage to publish his name, although it has been known to myself and most of the large exhibitors for some time. In his last letter to you he says, that perhaps I shall alter somewhat in my tone after reading the straightforward and honest letter of Sir St. George Gore. I still, however, maintain that I neither bought, sold, nor derived any benefit from the sale of the pen of birds, although the money did pass through my hands. With regard to Mr. Newsome's compassion for me for lending my name to the purchaser of the fowls, I should be only too sorry not to oblige a friend, either with my name or money, in so simple and straightforward a transaction; and I only hope that my name has been too long and honourably known amongst true poultry-breeders and the public to be damaged by the insinuations of such a man as the "TIMID EXHIBITOR."—JOHN DOUGLAS.

[All the above may be true but it does not justify Mr. Douglas acting as a purchaser. No judge should purchase either for himself or others until after the exhibition has been opened to the public.]

PIGEON LAYING FOUR EGGS IN FOUR DAYS.

LAST Wednesday evening a hen Powter was given to me. She had cross-paired by accident with a Fantail. On the day I had her, she had laid her first egg in every sense, being quite a young bird. I brought her home late in the evening with a Powter cock, which had also been given to me, and with whom she paired the next day. On Friday, as I expected, she laid her second egg, but being in a strange loft and with a new mate she took no notice of the egg. This I also expected would be the case; but to my surprise, on Saturday afternoon she laid two more eggs, one full-sized, but with a rough and imperfect shell, it was hard but too thin; the other was about the size of a sparrow's and with a similar or rather worse shell than the third egg. The hen appears somewhat ill, though again mating, so I give her hempseed and Indian corn. I have kept Pigeons for upwards of a quarter of a century, but never had a similar case. The Powters were in a loft by themselves, so I know that no other bird laid any of the eggs. Does Mr. Brent think the hen will be injured, and what would he advise me to do? I first thought of giving her loosening food, but was afraid.

I beg to thank Mr. Brent for his extremely kind and most interesting reply to my question about Fantails. That which he stated about the colour, and also the occasional imperfections seen in the colour of the eyes was quite new to me, and is a valuable hint in natural history. I see that Mr. Brent, like myself, thinks white the original colour of Fantails. I have had a private letter from a great breeder of them, who also thinks the same. I must, however, beg to differ from Mr. Brent, that coloured ones, if good, are, therefore, the more valuable. I incline to the idea that we should keep to the original colour in every variety in order to have the best and purest birds, but, of course, this is a matter of opinion.—WILTSHIRE RECTOR.

ESSEX POULTRY SHOW.—This Poultry Show is not a private speculation, but will be held in conjunction with the annual meeting of the Essex Agricultural Association, and the prizes paid by the local committee, which includes nearly all the gentlemen of the district. In fact, the secretaries guarantee the due payment of every prize.

HIVES WITH ENTRANCES AT THE TOP.

HAVING worked my bees on the depriving system for the last twenty-five years I have made my own hives, and have always constructed them so that the bees may enter at the top. The advantages of this are, in my opinion, very great. In the first place it thoroughly ventilates the stock, and supplies them with a constant current of fresh air (which our sanitary commissioners tell us is very requisite if we wish to enjoy perfect health) in the easiest possible manner, as the cold air always sinks to the bottom, while that which

has been used for respiration, and is consequently impure and damp, rises to the surface, and finds easy egress. Since I have adopted this method I have never lost a hive, nor I may say a single bee, through mildew, which I think is something to boast of. Another advantage is, that the bees have not so far to carry their honey, as they invariably place it at the top of the combs, and it is more easy to descend than to ascend with a load. Again, when a swarm is placed in an empty hive many thousands are employed in forming chains for the workers to ascend and construct the combs; and, although my plan does not entirely do away with the chains, I have always observed that a much greater number of bees were spared for collecting than when they have a bottom entrance, and I have consequently been able to put on my supers two or three days earlier.

I have never in my life seen or read of this plan, but I have read about inverting the old bell-shaped hives containing stocks to allow of supers being put on, and it was this that first suggested the idea to me; but I have a great objection to this plan, as it gives the bees a great deal more trouble to clean the hives, and it does away with the means of helping them, as the combs are then fast to the bottom instead of the top, and in course of time become clogged up with that dust and dirt which is always found on the bottom board, and which it is very necessary should be removed.—C. WILLIAMS, *Kingsland, Shrewsbury.*

[You appear to have originated and successfully carried out an idea which occurred to us, and was entertained with much enthusiasm some four or five-and-twenty years ago. In our own case, however, it never went farther than a sketch upon paper, and was ultimately abandoned without being reduced to practice, on account of the difficulty which we believed the bees would find in removing their dead and cleaning out their hive through an entrance at the top, as well as the excessive tendency to breed in supers which we imagined would be developed under such circumstances. We should be glad of a sketch and working description of your hive.]

UNITING BEES.

I HAVE two stocks of bees standing side by side which I should be glad to unite, if such a course is practicable at this season, the one in a common the other in a flat-topped straw hive. This latter is a weak stock. Might I place the common hive over it, having previously closed the apertures in its top with perforated zinc, and after leaving the two hives in this position for about twelve hours remove the zinc and allow the bees to unite?—H. T.

[We believe the safest mode of uniting your two stocks would be by inverting the weak one in a pail, and standing the other upon it. Then blow a little smoke into the interior, secure the bees by winding a long cloth round the junction of the two hives, and rap the lower hive until its inhabitants ascend into and unite with the bees of the upper one.]

VERY WEAK HIVES IN SPRING.

YOUR much-esteemed correspondent Mr. S. Bevan Fox in his very interesting report, "My Apiary in 1864," most clearly establishes the advantages of joining weak hives in spring. With his remarks I most heartily concur. Still hives are sometimes to be met with so very weak at this season (possibly casts or virgins of the preceding year), and the surviving working population so very scant, as to make a scarcely perceptible addition to the colony into which they are merged, while their valuable young queen is consequently sacrificed by such a procedure.

In extreme cases of this nature a still better plan may be successfully adopted. Administer what small quantity of food is necessary to preserve the little band in life till the advent of the swarming season, drive them as soon as a swarm comes off, and capture their queen, then introduce her to the stock whence the emigrants proceeded. The effect will be that breeding will thus go on uninterruptedly, and two prime swarms to all intents and purposes, if I may use the expression, be looked for from one stock the same season. The first swarm, if not otherwise destined, might with effect occupy the works of the driven weak hive.

The foregoing operation may best be illustrated by a case from my own apiary. In the spring of 1863, acting on the best advice your excellent contributor "A DEVONSHIRE BEE-KEEPER" could then offer me, I in vain attempted to strengthen the foul-breeding stock sent me by exchanging frames with my strong black colonies, thereby carrying contagion into my whole apiary, save one "beat-out" of the preceding fall in a Stewarton-hive, which fortunately escaped contamination, being considered too weak at the time to aid in the work. Finding this hive subsequently my only hope, I very carefully nursed it, so that by the beginning of June it was quite full. I then drove an artificial swarm, and having placed it in one of the many pure-combed frame-hives I had prepared for Ligurian propagation, sent it to a distance.

In one of the diseased black colonies was a very fertile favourite queen, which I was very loth to destroy; her formerly numerous progeny had by this time dwindled to the zero point, I therefore destroyed them, and by way of experiment set her over the "beat-out," and the following day introduced her to her new subjects, who, I was gratified to find, welcomed her most cordially, and I saw her no more till, about three weeks thereafter, she most unexpectedly proudly emerged at the head of a very fine natural swarm, which, also was hived in a combed-box. Shortly after the artificial swarm sent forth a good virgin, which was similarly disposed of; and the "beat-out" at the usual time gave a second, or strictly a third, swarm, hived in the same manner.

By the 1st of August, when a second Ligurian stock arrived from Devonshire, it was a positive relief, so full were they, to make from each of the two strongest of my stocks artificial swarms, to be Ligurianised. By a little management my poor little, exclusively-sugar-fed, "beat-out," was thus multiplied into seven first-rate colonies, amply formed to stand over the winter had all gone well; but most unfortunately, as the readers of THE JOURNAL OF HORTICULTURE have been already apprised, the second Ligurian colony brought with it again the desolating plague, so that the spring of 1864 found me beginning the world once again with a single sugar-fed "beat-out," the gift of a friend.—A RENTFRESHIRE BEE-KEEPER.

SWARMING VERSUS STORIFYING.

NOTICING a discussion in your valuable Journal under the above heading, I now make a first attempt at describing my bee experience, in the hope that it may prove interesting enough to obtain a place in your columns. A few years ago I took a great fancy to possess a hive of bees, more for the pleasure I anticipated in studying those interesting insects than for any benefit likely to result from their possession. I was then entirely ignorant of all that pertained to bees and bee-keeping, and my locality being considered unsuitable for the pursuit, my friends endeavoured to dissuade me from the attempt. I may mention that I reside in the western suburb of Greenock, in the vicinity of several of its celebrated sugar refineries, happily styled by you some time ago, "slaughter-houses for bees." From the scant pasturage of a town neighbourhood I was afraid they might be tempted thither, or possibly across the Firth of Clyde to the opposite heathery hills of Argyllshire, in too many cases never to return.

Nothing daunted, however, I procured a prime swarm, and set them up in my garden, which unfortunately slopes to the north. I became deeply interested in my industrious little favourites, and watched with much pleasure during my leisure hours their many movements, from the advent of the first load of pollen in the spring to the expulsion of the last lazy drone in autumn. Although I reaped no honey harvest I most carefully fed my bees, as their necessities seemed to require, and by-and-by purchased a weighty straw skep as an addition to my stock. However, the summer of 1863 found me where I started—with only one stock, although I never destroyed any of them, and only on one occasion obtained a little honey. The chief cause of my want of success I ascribed to my stocks being weakened in population from swarming, their reduced numbers being barely adequate to gather what would sustain them. But what came of the swarms? you may naturally ask. These generally came off in my absence during business hours; and invariably, even though hived, made off to people the

combs of defunct colonies in the gardens of some of my neighbours, whose hives swarmed abundantly, but who took no pains to feed, allowing them to perish and be thus re-peopled.

As mentioned, I had but one hive in the summer of 1863, and having the good fortune to know your esteemed correspondent, "A RENFREWSHIRE BEE-KEEPER," I made him acquainted with all my misfortunes. He strongly advised me to order a set of improved Stewarton octagon hives, and keep my bees on the depriving or storifying plan, as being by far the most suitable in my case. I was to drive the bees of the old stock into one of the boxes, appropriate its contents, nadir with breeding-box after breeding-box as the inmates required room, and not to look for any honey that year. From the greater earliness of the swarms in mine compared with my friend's inland and later locality, he raised my hopes by telling me, that notwithstanding my bad start, I might yet turn out a most successful bee-keeper. I received the octagon boxes, the bars all moveable, with the neat little Woodbury rib, to which, as directed, my bees were speedily transferred and rapidly made combs, at the end of the season becoming a weighty stock. In the beginning of summer this stock was about full in all the boxes, and I much dreaded the escape of a swarm, when I fortunately met your correspondent one day in town. He explained that to obviate this and again to stimulate their exertions, I could with effect re-arrange the boxes, appropriate end combs, excise royal cells if any, and admit to a super. This operation of taking the boxes apart and having the immense population of this strong colony about my ears, I frankly owned my want of nerve to carry out, but he quite relieved my fears by kindly promising to send his man to assist me in the work, which he accordingly did. We got through most capably, and I was put in possession of 14 lbs. of beautiful honey. I had the further satisfaction of seeing my bees go on with redoubled ardour, and the super occupied. As I saw it verging towards completion, I put on a second above the first (my friend having warned me of the risk of placing an empty box between a full one and the stock). This too was taken possession of and the first removed so soon as completed, and in like manner a third was given when the second was well advanced, which latter was afterwards taken off complete. The weather broke before the third was altogether filled. However, on the whole, I was highly pleased with the result, this one storified stock having yielded me 68 lbs. nett, of the finest honeycomb entirely free from either pollen or brood. It was my intention to have given the weight of the stock as it now stands, but on trying to raise the pile of boxes out from their octagon cover, I found it such a lift that I thought it prudent to leave it alone in the meantime. The great weight, however, augurs well for a repetition of the preliminary spoliation process early next summer, which I think a much safer procedure than encroaching on the store in the breeding portion of hives in autumn.

My experience of the storifying process in the past season has been so satisfactory that I have already prepared two handsome octagon covers to set up as uniform with the first, to people which it is my intention to purchase two good colonies in common straw hives, transferring by means of frames, which I think of adopting, their entire contents, combs as well as bees, into the two new sets of octagon boxes, thereby avoiding the risk of swarming, and I hope to be able to report the success of my fresh attempt in the coming season.—AMATEUR.

STORE-ROOM FOR BACON.

WHICH of the three following positions would be the best for keeping six sides of bacon? I have an underground room, with a window opening to the garden, with a door opening into a passage, which passage has a door leading to the garden also. I could cut a ventilator through the top of this door so as to let a current of air through the room.

I have some spare room in the scullery attached to the kitchen; would this be a suitable place?—this is also underground—or would the steam from washing, &c., affect it? I have also a spare room at the top of the house, which I could devote to the purpose. Perhaps "A WILTSHIRE RECTOR" could give me some advice.—A HOUSEHOLDER.

["A HOUSEHOLDER," like the late Sir Robert Peel, offers

three courses for choice, but I cannot wholly approve of any of the three. The second is without doubt much the worst, the steam would be rainous, and the room being underground, far from favourable. The first is better, but still underground. I should, therefore, advise "A HOUSEHOLDER" to try the room at the top of the house, especially as we have not winter before us. Let the bacon be well watched, I mean frequently examined, lest the fly should get into it; neither let it be covered up, for then detection is less easy.—WILTSHIRE RECTOR.]

OUR LETTER BOX.

EGGS EXPOSED TO FROST (G. H.).—There is no doubt eggs are injured by frost. We are unable to give you the number of degrees, but we have proved, to our cost, that there are frosts in May hard enough to spoil them. Our impression is that 6° will do it. The appearance of a frozen egg is that of one with the yolk and white partially mixed, and giving the latter a cloudy appearance. The difference, though not to the same extent, is much the same as in oil in warm or frosty weather.

DORKING COCK SUBSTITUTED FOR COCHIN COCK (W. M.).—The substitution of the Dorking cock would, in our opinion, increase the size and lighten the colour of the eggs. Your next is a vexed question. Some will tell you the former influence will not cease till all the present laying of eggs has taken place; others will tell you the new breed begins a fortnight after the change. We are disposed to hold with the former opinion. Those who differ are as well versed as ourselves. Observe your birds narrowly, and act as judge between us. The Bantams may run with the large variety.

M. DE SERA (H. S.).—We shall be very much obliged if you will give us your experience more in detail. We also believe Mr. de Sera to be the "poultry Mrs. Harris." We have sought him all over France, but without success.

DUCK'S LEGS PARALYSED (Rosen).—There are places where the water is not favourable for Ducks, and we knew one where every Duck that was put on the pond was immediately cramped, and finally paralysed. The water was remarkably clear and cold. This is, however, a rare case, and where such are frequent we are always disposed to look for want of constitution or improper and insufficient feeding. Put the Ducks for a time in an outhouse, or a pen of some kind, cover the floor with straw, and feed on oats put in a trough, with plenty of gravel. Another cause of such attacks is, that ponds are very often made receptacles for everything, and that poisonous matter gets in. Snow water disagrees with Ducks, and they have had a great deal of it this winter.

PRODUCERS OF LARGE EGGS (Idem).—If you do not like Spanish, the Crève Coeur, and La Flèche are equally good layers, and do not sit. We are not sure they bear close confinement so well as the first. Their eggs are, if anything, larger. All hens have laid badly this year.

CONFINING GESE (A. W.).—We never shut up our Geese, yet they always lay their eggs in the house.

FLOOR OF PHEASANTRY (A. B. C.).—The floor of a Pheasant-house should, like that of a fowl-house, be of earth, and if covered with loose fine gravel, so much the better. You may put a small box in one corner if you please, but both Golden and Silver prefer to scratch out a hollow and to lay there.

SICK PIGEON (H. L. C. R.).—I think you cannot do better than give your hen Barb, which has a rattling in her throat and watery eyes, a pill containing one grain of calomel, to be repeated in a day or two if required, and a bolus of cod liver oil made up with flour or meal, twice a day.—B. P. B.

LARK WITH WEAKENED SONG (F. B.).—Your Lark, whose voice has become weak, seems either to have caught cold, or the hempeed has disagreed with him, probably from being too fattening. After his food, give him no hempeed, but cooked meat and hard-boiled egg instead, and put some Spanish liquorice in his water. When recovered feed on minced cheese and oat groats. Let him have a fresh turf as often as convenient.—B. P. B.

COLOUR OF A BEE-HOUSE (A. B. C., *Horstlerpoint*).—We deem a light stone colour the best, as tending to keep the house cool in summer. Allighting boards should be left unpainted, but it would be well to shelter each by a porch, and paint these porches and their interiors of different colours for the better guidance of the bees.

VARIOUS APIARIAN QUERIES (W. B. W., *Stone*).—Buy "Bee-keeping for the Many," price 4d. (free by post from this office, 8d.). Let your stocks swarm, and stock Stewarton hives with the swarms. These hives are likely to answer your purpose as well as any, but none can be absolutely relied on to prevent swarming in all seasons. Snowdrops and crocuses in the spring, borage and mignonette for the later months.

BEES ON A HOUSE ROOF (A. A. F.).—If sheltered as you describe, bees are likely to do better on the roof of your outhouse, than in a confined courtyard. Buckwheat forms excellent pasturage for bees, and a few acres of it would be of great advantage. It should be sown in April.

TRANSFERRING BEES (Beginner).—This is rather too difficult an operation for a beginner, but full instructions for transferring bees from a common hive to a frame-hive were given in No. 75, of our New Series. Drones are much larger than workers, and may usually be seen on the wing in great numbers during the middle of a fine day in May, June, or July. The queen is seldom seen by ordinary bee-keepers. She is about one-third larger than a worker, but is less bulky, and has a longer and more pointed abdomen than the drone.

PUTTING SUPERS ON COMMON HIVES (Jersey).—Get a square platform, made of three-quarter-inch wood, of sufficient size to accommodate a full-sized super, and clamped to prevent warping. Cut a three-inch hole in the centre, and insert three or four wood screws an inch long in the underneath side, leaving their heads projecting about half an inch. Then bed this platform in mortar tempered with cowdung on the top of the hive, and when the mortar is set out an aperture in the straw with a sharp pen-knife, corresponding with that already existing in the wooden platform. This will enable you to super each of your hives as you may deem most suitable, upon which point, however, you must form your own opinion.

SWARM-PRIM (W. Beechell).—Your best chance of obtaining a constant supply by advertising what you have to sell.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	APRIL 11-17, 1865.	Average Temperature near London.			Rain in last 28 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
11	Tu	Lime foliata.	55.4	35.6	45.4	19	15 46	47 46	27 7	12 5	16	1 1	101
12	W	Whitlow Grass flowers.	55.6	36.6	46.1	25	15 5	49 6	29 8	38 5	17	0 45	102
13	Th	Cherry flowers. [BORN. 1857.	55.4	35.7	44.5	16	10 5	51 6	31 9	8 6	17	0 29	103
14	F	Good Friday. PRINCESS BEATRICE.	59.0	36.4	47.2	14	8 6	52 6	30 10	43 6	18	0 13	104
15	S	Red Rattle flowers.	59.8	37.6	48.7	19	4 6	54 6	25 11	24 7	19	0 2	105
16	Sun	EASTER SUNDAY.	59.2	36.3	47.7	16	8 5	56 6	morn.	13 8	20	0 16	106
17	M	EASTER MONDAY.	59.5	36.1	47.8	14	2 5	57 6	15 0	9 9	21	0 31	107

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 57.7°, and its night temperature 36.0°. The greatest heat was 75° on the 14th, 1852; and the lowest cold, 20°, on the 14th, 1847; and 15th, 1852. The greatest fall of rain was 0.63 inch.

ORCHIDS IN COOL HOUSES.



N a speech recently delivered by an eminent statesman, the following remark occurs: "Beware of extreme men and measures, they are not trust-

worthy; as a rule you will find the men with sound judgments taking the middle course." This excellent advice appears to me to have a very wide application: for instance, if an advocate of the "cool system" of growing Orchids were to advise a temperature of say 40°, and another person opposed to greenhouse treatment were to recommend 80° as a condition to secure success, the probability is that 60° would be the safe course.

It appears to me that the tendency in Orchid cultivation at the present time, is to go to an extreme. This "cool treatment" about which we hear so much, is, in my humble opinion, a dangerous experiment. I have tried it on the following Orchids, some of which may be termed representative plants, and in my case it has failed—*Dendrobium speciosum*, *D. nobile*, *D. fimbriatum*, *D. Paxtoni*, *Odontoglossum grande*, *O. citrosimum*, *Oncidium altissimum*, *Brassia maculata*, *Trichopilia tortilis*, and *Lælia anceps*. They have been subjected to a temperature of from 45° to 50° during the last eighteen months, and their condition is worse now than when I commenced the trial. On the other hand, plants of the same kinds as those which I have named, have been grown in the Orchid-house, ranging from 60° to 70°, and these are in excellent condition.

That many good plants have been lost in consequence of too much heat having been given, I know, more especially some of the most lovely of the rare *Odontoglossums*. These, I am certain, together with *Lycaste Skinneri*, and a few others that might be named, will grow much better in a cool house, but when I see long lists of valuable Orchids recommended to be grown in a greenhouse, I confess it somewhat staggers me, as it is quite opposed to my experience and observation. My own impression is, that the number of Orchids that will grow in a greenhouse is extremely limited, and I fear that many persons who are now endeavouring to cultivate such plants as *Cattleya Mossiae*, *Lælia purpurata*, and *Odontoglossum citrosimum*, in cool houses, will at no very distant day feel strongly inclined to treat their advisers coolly.

It is said by the advocates of the "cool system" in support of their theory, that in their native habitats ice is often found on Orchids that we grow in this country in a hot Orchid-house. Of this fact there is no doubt, but I have yet to learn that an exact imitation of the

natural conditions by which plants are surrounded, is the most successful mode of growing them artificially. It is a well-known and remarkable fact, that many of our native plants, Ferns especially, thrive best when subjected to the temperature of our stoves and greenhouses. I should be delighted to find that the many Orchids recommended for greenhouse treatment flourished in their cool quarters; it would be much more comfortable and economical, consequently would induce many more to grow these beautiful objects. The experience of all acquainted with the subject will be invaluable, and if our object be to edify one another, we shall derive benefit from the discussion of this important subject.—BRUCE FINDLAY, *Manchester*.

ON FORM AND COLOUR.

SOME months ago in a communication entitled "A Plea for a Compromise," I ventured to proffer a few remarks on form and colour, especially with regard to the arrangement of plants in flower gardens. The subject, I am aware, demands the efforts of a much abler pen than mine; but, if I mistake not, the contributions to THE JOURNAL OF HORTICULTURE are taken by your intelligent readers for what they are worth. My purpose is to show with regard to modern flower gardening, that at least one important element of pleasure which exists in nature in endless and exquisite profusion, is entirely ignored, while at the same time the fundamental principles of harmony in colours are constantly violated.

I do not wish to commence here an indiscriminate attack upon the system of massing colours in large gardens. Its most earnest advocates, however, must admit that it is a system open to grave objections, and fraught with danger to the true interests of horticulture. Of late years the end and aim of popular gardening has been to arrest the eye by violent and unnatural contrasts, effected by masses and continuous lines of positive colour. The result has been, too often, no harmony, no repose; the eye pained and wearied by the contemplation turns instinctively to the blue sky or fresh green turf.

A blind man was asked what was his idea of scarlet. His reply was curiously suggestive. "It is like the blast of a trumpet." Colour has its characteristics, its harmonies and discords, its fortes and pianissimos, its light and shade. The "tantarra" of the horn with its sustained and piercing monotone—its streaks of sound, if I may so express it, pleases us chiefly from its agreeable associations—the village postman, the mail coach, and the cover side—elsewhere it is simply unendurable. A single band or mass of intense scarlet—say Tom Thumb Geranium, is the blast of a trumpet. As we look from the window it assails us; if we enter the garden it impinges on the retina of the eye like the trumpet blast on the ear, it glares at us through the hot noon of the dog days, and if we gaze on it for a moment, by a well-known optical illusion the impression remains for a time on the eye, and everything is spotted with scarlet. Now edge this belt with yellow *Calceolaria*—say *Aurea floribunda*

(a very common arrangement in what are called show gardens), and we add another monotone, which I will compare to the scream of the clarinet. Imagine, then, reader with the sensitive nerve, if you can without a shudder, the utterance of such a diabolical yell. The nearest approach in nature to the scarlet of Tom Thumb that I can think of, is the common Corn Poppy; but what more beautiful than the little "headacher" glinting and glowing among the stalks of the browning Barley with a rich undergrowth of Clover and seeds? The Poppy leaf, however, is stained with purple at its base, and is crumpled in texture like the wing of a new-born butterfly. The mass, too, is dispersed and broken by the Barley stalks mingled with the blue and white Cornflower, and blended, except in a direct line with the eye, into a purplish rosy bloom.

Colour in nature is seldom, if ever, positive. Gaze around you in a landscape, there is not a square inch of positive colour. In a flower there is a subtle gradation of tint from the tip to the base of the petal. In double flowers, especially, the shadows of overlying petals and effects of transmitted light are very considerable. It is these, added to the charming irregularity of the petals, which give to the Rose its exquisite grace. In some single flowers—the white Lily for example—the depth of the convolutions renders the effects of the shadows and transmitted light still more characteristic. Now one result of what is called successful hybridisation has been to render colour more positive. Indeed the aim of the hybridiser seems to have been to obtain flowers of positive colour: this applies more particularly to bedding Geraniums; we have as a result colours of the Tom Thumb and Frogmore class which may be called "the hard scarlet section," they are a necessary consequence of the present system of massing colours, when the garden is appreciated chiefly from the drawing-room window or from the balcony of a Crystal Palace.

One remarkable characteristic of plant-nature is the preponderance of green foliage; the flower is the gem, the foliage the massive and beautiful setting. In the parterre the turf serves this latter purpose to a very imperfect degree. However pleasing in some respects the fresh green turf, it is ill adapted to furnish the light and shade, the varying green tints of growing shoots, and the rich luxuriance of leaf-growth, necessary for a perfect *coup d'œil*. It is the intermingling of leaf and flower that gives to the flower-bed its most charming and interesting feature—the infinite play of light and shade caused by the varying height of flowers and leaves. Foliage, then, should not only be present in abundance, but the form and distinctive character of the foliage should be conspicuous, and this principle should obtain not only in the planting of flower-beds but in the exhibition of specimen plants and cut flowers. The beauty of great masses of bloom in the Azaleas and Geraniums exhibited would be enhanced by the presence of a more adequate proportion of healthy green foliage. Cut flowers, too, especially Roses (and here I join issue with your able coadjutor "D." of Deal), would surely present a more pleasing aspect if accompanied by a spray of their own foliage, which is, moreover, in many instances, as characteristic as the flowers themselves—take, for example, Eugène Appert, Lord Eaglan, and Gloire de Dijon. There is something incongruous, it appears to me, in these long-extended lines of decapitated Roses destitute of a single green leaf. I remember still the indignant feeling that filled my breast years ago when a boy—an old lady being solicited for a Rose, broke off an opening bud, and stripped it, kind soul, of every vestige of foliage.

Speaking of Roses, what ugly inartistic objects are standard Rose trees! towering above our children's heads, dotted about on their solitary spindle shanks. On their first introduction novelty and its accompanying price caused them to be much sought after. A noted Rose-grower has suggested pyramidal trees; but what more simple, and beautiful, and eligible than a well-trained bush? To be sure, they are only a quarter of the price, but when on their own roots it is well known that they produce much finer flowers. If standard Roses must be grown, let them grow naturally, so as to shield the hideous stem; the flowers may not be quite fine, but they are much more numerous, and a standard bush with its branches forming a beautiful dome of flowers is a far more beautiful object than the

things now grown as standards. Last year I had a plant of Coupe d'Hébé so grown without the aid of the pruning-knife. There were at one time upwards of one hundred fully-expanded blooms decking its branches, which drooped in graceful wreaths to the ground. By the way, what Rose, excepting the old Cabbage, of course, is more beautiful than Coupe d'Hébé? Not Comtesse de Chabillant, certainly, in spite of the catalogues. It is too like a florist's flower.—T. W., Harrow.

(To be continued.)

GENERAL HORTICULTURAL EXHIBITION AT AMSTERDAM.

OUR earliest ideas connected with gardening associated it with Holland; and when we were informed that the Royal Netherlands Horticultural Society were making an effort, under the patronage of their Queen and the Prince of Orange, to assemble the botanists and gardeners of Europe, and to have at the same time an exhibition of plants, flowers, and fruits, and of the art productions relative to gardening, we hailed it as a right effort and in the right place—but let no one suppose that such an effort is needed to revive there a love of horticulture. The love of bulbous flowers is still there in the ascendant, as we shall hereafter particularise; but more than that, a general love of gardening prevails. It is gardening under difficulties, for the climate and excess of water, both in the soil and atmosphere are at a maximum, yet first-rate gardening prevails. The growers of plants for sale are among the princes of florists and nurserymen; and even down to that class who live in barges throughout the year, their cabins are to be found adorned with flowers, and Tulips, Crocuses, Hyacinths, and Anemones are grown by them in pots placed in secure corners about the barge.

Well, to Amsterdam, on the 5th of this current April, were invited 150 of the botanists and gardeners of the Netherlands, 56 of France, 75 of Belgium, 1 of Switzerland, 2 of Italy, 1 of Spain, 27 of Prussia, 7 of Austria, 3 of Bavaria, 3 of Hanover, 3 of Wurtemberg, 3 of Baden, 2 of Saxe, 2 of Luxembourg, 1 of Weimar, 6 of the Grand Duchy of Hesse, 1 of the Electorate of Hesse, 2 of Nassau, 5 of Hamburg, 1 of Frankfurt, 1 of Sweden and Norway, 2 of Denmark, 4 of Russia, 1 of Schleswig, and 12 of Great Britain. Of these, very few failed to attend, and, consequently, at noon on the day we have named, were assembled in the Palace of Industry nearly 300 of the most distinguished botanists and gardeners of Europe. It would be invidious to particularise even one, but whoever had the pleasure of being there saw assembled, we hope not for the last time, some of the best botanists and horticulturists of nearly every State in Europe.

The President of the Royal Horticultural Society having addressed this assembly, they were divided into ten sections. To each section a certain number of the classes of plants and relative articles exhibited were assigned, and to which they were to award prizes. This was no easy task, and again and again had a show of hands to be taken before a decision could be obtained.

The Palace of Industry, in which the exhibition was held, was erected in 1863 for an international exhibition of the same kind, but on a smaller scale as that in this country at Kensington; but the Netherlands, with sounder judgment than usually prevails in such matters with us, erected a building so ornamental and so durable as to be worth preserving for similar purposes in after-years. The best idea we can give of it is by describing it as two conservatories like that in the Royal Horticultural Society's Gardens at Kensington, but more ornamented, with a gallery all round instead of only on one side, and with a handsome centre, surmounted by a lofty dome. Besides the centre nave, if we may so describe it, there are side aisles, and over these are rooms, suitable for the supply of refreshments, committee meetings, and similar purposes.

The floor of the nave was marked out by broad turf edgings, so as to represent a geometrical garden. In the beds thus bordered were the plants exhibited, grouped and arranged, and the paths among them were devoted to the spectators. There is a fountain in the centre of each half of the nave, but these rather marred the effect, for they are neither artistic nor powerful.

Our readers would take little interest in a detail of the names of the prizetakers, so that we shall name but few of them, and be more particular about the plants. We will pass over the general collections, because generally inferior to those we see at our chief London exhibitions. The *Azaleas* were small specimens, but well bloomed, and to our taste spoiled by being grown as a semi-globular bunch, on the top of a long naked stem. The *Roses* were excellently bloomed, but similarly offensive by being cultivated, though in pots, on long, naked, four-foot stems. The *Camellias* were most excellent, and a new white one is about the largest, best-shaped, stout-petaled variety we ever saw.

NEW PLANTS.

Before we describe the plants exhibited, we must add our protest, to that of many others, at the erroneous awards made of many of the prizes, and we must say that they must not in any way be taken as a criterion of the merits of the various plants exhibited.

For the prizes for twelve new plants introduced by the exhibitor there were four exhibitors—viz., Messrs. Linden, of Brussels; Veitch, of Chelsea; Ambroise Verschaffelt, of Ghent; and Groenewegen, of Amsterdam.

Mr. Linden's collection was composed of an *Anthurium magnificum*, very similar to, if not identical with, the *Anthurium cordifolium* sent out recently by the Royal Horticultural Society; an *Echites* much in the way of nutans. *Franciscea Lindeniana* in bloom, resembling *confertiflora*; two *Urospathas*, named *marmorea* and *maculata*, with leaves something similar to *Caladium cupreum*, but not quite sufficiently developed to decide as to their merits. There were also *Marantas*. One named *rosea picta*, with small round leaves, nicely marked with red, seemed to us one of his most promising plants. He had also *Reimijia candida*, a plant with jasmine-like flowers, but not being open we could not speak as to its merits. Undoubtedly the best plant in the collection is *Aralia mids-de variegata*, from Japan, resembling more a splendid silver tree-ivy than any other plant. The leaves are about two inches in diameter, of great substance, and beautifully variegated.

Mr. Veitch showed his fine *Maranta Veitchi*, a beautiful new *Sonerila*, with leaves about three inches long and spotted with large pink spots; *Urceolina aurea*, a fine bulbous plant, with yellow flowers, *Polystichum* species, *Lycopodium* species, *Schismatoglottis* species, and others.

Mr. A. Verschaffelt showed in his collection a splendid Fern, named *Cibotium regale*. This is a greenhouse kind, and its fine fronds, which measure eight or nine feet in length, were much admired. This variety forms a stem of five or six feet high, when the fronds are proportionately large. He had also a new stove Palm, named *Verschaffeltia splendida* by Mr. Wendland, of Hanover, (being a new genus), which was also much admired; but it will evidently require a large house, being a strong grower. We noticed also in the collection two new kinds of *Amaranthus*, with leaves of the colour of *Amaranthus melancholicus ruber*, but very much smaller. The plants are apparently very easily cultivated, but we do not think they will ever be very useful for decoration. There was also a curious *Dracena*, a seedling, having evidently the same character as *Dracena indivisa*, but the foliage was of a bright bronzy hue and had a very nice effect. The collection was made up with two variegated *Smilaxes*, a *Dieffenbachia gigantea*, with the stem spotted like *D. grandis*, but having also the leaves spotted with white; a *Marattia jacarandae*, *Maranta splendida*, &c., but not calling for any particular notice.

Mr. Groenewegen's plants were much smaller, and some not quite fully developed, and except a variegated *Saccharum officinarum*, from Japan, which has the leaves more or less striped with white, this collection did not contain anything of very striking merit.

For plants introduced before 1864 Mr. Linden and Mr. A. Verschaffelt again competed, and also Mr. J. Verschaffelt, of Ghent. The former had in duplicate nearly all the plants already named in the first section, and also a variety of *Dendrobium nobile*, with flowers of a pure white ground; *Coccocypselum metallicum*, a trailing plant, having the leaves completely bronzed; *Alocasia singaporensis*, a strong form of *Caladium Veitchii*; *Saurauja sarapiguensis*, a plant with large red leaves, which will probably make a fine out-

door decorative plant, being similar in habit to *Wigandia caracasana*; *Sphaerogyne cinnamomea*, *Cissus amasonicus*, *Crescentia Liboniana*—the three latter of which we have seen in London before. Mr. Verschaffelt had plants of *Agave Schidigera* var. *ignescens*, a fine-looking variety; Japanese variegated *Camellia*, *Dracena Cooperi*, a variegated *Conoclinium*, *Prumnopytis elegans*, &c.

Mr. A. Verschaffelt had many of the plants similar to those described before, and also *Aralia Sieboldi reticulata*; several fine Japanese *Acers*, including *sanguineum*, which is in the way of japonicum polymorphum and *Frederici Guillemi*, with variegated foliage; *Agave hystrix*, from California; a variegated *Ardisia* from Japan; *Achyranthes Verschaffelti*, &c.

For six new plants introduced by the exhibitor there were two collections of plants from Mr. Groenewegen, comprising *Phyllogathis rotundifolius*, *Jambosa* species, *Aglaonema oblongifolium*, *Symphonium divaricatum*, a form of *Caladium Veitchii*, *Cycas pandanifolia*, *Medinilla farinosa*, *Nephelaphyllum tenuifolium*, much in the way of *N. pulchrum*, but with smaller and more deeply coloured leaves. The other plants do not require any particular notice.

In the section for three new plants, there were no prizes awarded, the only plants shown being three *Begonias*, with reddish crimson foliage and white flowers, but which are certainly not at present to be looked on as any improvement to already well-known kinds.

In the section for one new plant in flower, introduced by the exhibitor, there were seven plants offered for competition. Three came from Mr. Veitch, of Chelsea; *Franciscea Lindeniana* from Mr. Linden; *Siphocampylus* species, we believe from Leyden Botanic Gardens; *Tillandsia thyrsoides* from Utrecht; and the new *Abutilon* from Mr. A. Verschaffelt. It is quite certain that in this instance the prize was given to the worst plant of all—viz., the *Tillandsia*, which, we believe, is a very old plant, and, besides, is ornamental neither in flower nor foliage.

Mr. Veitch's three plants were his two new seedling *Rhododendrons*, named respectively *Princess Alexandra* and *Princess Helena*, and another unnamed kind; and how the jury could have overlooked these and the other much finer plants than the *Tillandsia* is incomprehensible. The second prize was given to the *Abutilon* of Mr. A. Verschaffelt.

In the section for a new plant not in flower, and not yet for sale, there were nine competitors; and here again we must totally disagree with the awards made. The first prize was given to a plant from the Leyden Botanic Gardens—*Cyrtandra bicolor*, a Gesneraceous-looking plant, with leaves about 5 inches long, and of a glossy bronzy hue, but certainly as a plant remarkable for its beauty of foliage not to be compared with others in this class. Mr. Veitch came second with *Maranta Veitchi*; and the other plants exhibited were *Aralia Sieboldi foliis reticulatis* from Mr. A. Verschaffelt, a fine plant from Japan; *Yucca aloifolia filamentosa*, a new variety imported last year from South America by Mr. J. Verschaffelt, who also exhibited *Agave Schiderea ignescens* in this class; *Rhopala nobilis* from Mr. Linden; and *Chamaerops humilis foliis aureo-variegatis* from Mr. Vervaene, of Ghent. This is a seedling raised two years since, and the leaves are slightly striped with bright yellow markings, which are, however, at present hardly sufficiently developed to enable one to judge fully as to the merits of the plant.

In the class for collection of bulbous and tuberous plants in bloom, Tulips and Crocuses excepted, we observed some fine *Fritillarias*, *Iris herbacea pumila violacea*, a dwarf variety of the colour of the Neapolitan Violet; also *Iris reticulata*, *Sprekelia formosissima*, *Lilium auratum*, *Lilium Feu Korman*, and many other plants not particularly interesting, a good specimen of *Imantophyllum miniatum*, and some nice dwarf *Amaryllis*.

In the class for collections of twenty-five *Amaryllis* for nurserymen were some of the finest varieties we have ever seen, particularly *Fidelio*, *Johanna Catharina*, and *Jean Paul*.

In the classes containing the Hyacinths in pots there were many good specimens; but they were by no means so fine as those exhibited in London by Messrs. W. Cutbush and Son, and Mr. W. Paul. The sorts were the same as we usually receive from Holland.

For the best new single Hyacinth not yet in commerce

the first prize was given to a good black variety, and the second prize to a very inferior blue one.

The first prize for the best new double Hyacinth was awarded to No. 295, a dirty white variety, so utterly wretched, that how the Jury could possibly have awarded it we are at a loss to understand. The second prize went to No. 66, a semi-double red, of good colour, but also a very poor flower.

We were much disappointed with the Hyacinths shown in these two classes, as there were none worth introducing into England.

In the class for collections of 100 pots of Single Tulips, seventy-five varieties, three plants in a pot, the first and second prizes were given by lot to the two collections, as they were considered by the Jury of equal merit; but we considered that exhibited by Messrs. Byvoet as decidedly the best. The sorts were very good, but they were none bloomed so fine as we see them at the shows in England. Proserpine, Roi Pepin, Vermilion Brilliant, Cottage Maid, Keizerkroon, Grootmeester van Maltha, Standard Royal, Rose Gris de lin, Geele Prins, Globe de Rigaut, and Beauté Frappante were amongst those that struck us as being the most desirable.

In the class for Late Tulips the plants were well grown, considering the great difficulty there is in forcing them. The Tulips were planted three bulbs in each pot, and occupied about 60 yards of staging, there being over 4000 bulbs exhibited.

In the class for 200 pots of Crocuses, five plants in each, and at least fifty varieties, there were three fine collections shown, containing many new and fine varieties.

The Hyacinths exhibited in glasses were all well grown, certainly superior to any we have seen grown in England in the same way; and as the Hyacinth requires from five to six years to raise flowering bulbs from seed, and then many years more before a sufficient stock of any sort can be produced for sale, there is little prospect of many new good sorts for some years to come. The growers are now quite alive to the necessity of improving the sorts by hybridisation, but the result of their labours cannot be ascertained for a long time. The Hyacinths were staged from five to six rows deep, and occupied a space of about 80 yards, and the general effect was pleasing, there being altogether about 2000 bulbs exhibited.

We add a list of the Hyacinths bloomed in glasses, to show our readers what can be accomplished in this mode of cultivating them:—La Belle Blancheuse, white; Agnes, pink; Lord Wellington, French white; Parelbod, pale blue; Alba Superbissima, white; Louis Napoleon, crimson; Madame Marmont, white shaded with pale blue; Sir Lytton Bulwer, French white; Van Speyk, pale blue; Emmeline, pale pink; Lord Anson, French white; Rouge éclatante, crimson; Lady Franklin, pale pink; Prince Albert, dark violet; Tubiflora, French white; Cynthia, pale crimson; Heroïne, straw colour; Wilhelm de Ersk, pale violet; Mirandoline, white; La Prophète, pale pink, dark centre; Charles Dickens, blue; Von Schiller, dark pink; Grand Lilas, pale lilac; La Tour d'Auvergne, ivory white; General Havelock, dark purple; Conquest, straw; Dame du Lac, pink; Mammoth, white; Prince Albert, dark purple; Garrick, dark blue; Prins van Waterloo, white; La Reine de Jacinthes, rosy crimson; Emma Levray, dark straw; Haydn, dark lilac; Noble par Mérite, pink; Couronne de Celle, pale blue; Solfaterre, pink; Grandeur à Merveille, French white; Grande Vidette; pale porcelain blue; L'Unique, dark lilac; Grande Vidette, white; Amy, rosy pink; Ida, pale straw; Argus, violet, with white centre; Alba Maxima, white; Macaulay, pink; Von Humboldt, darkest purple; Jaune Suprême, straw; and Orondates, pale porcelain blue.

The best of the Hyacinths were—

Double Reds.—Noble par Mérite, Susannah Maria, Louis Napoleon, Ornement de la Nature, Lord Wellington.

Double Blue.—Van Speyk, Garrick, Laurens Koster, Blocksberg, Comte de St. Priest, Madame Marmont.

Double White.—La Tour d'Auvergne, Prins Van Waterloo, La Vestale, Sir Bulwer Lytton.

Single Reds.—Macaulay, Von Schiller, Amphion, Mons. Faesch, Le Prophète, Victoria Alexandrina, Solfaterre, Robert Steiger, Caraignac, Milton, La Dame du Lac, Cosmos, T. d'Inces Clothilde, Princess Charlotte.

Single Blue.—Grand Lilas, Grande Vidette, Marie, General Havelock, Prince Albert, Charles Dickens, Orondates, Baron Von Tuyll, General Lauriston, Mimosa, La Nuit, Uncle Tom, Argus, Pieneman, Admiral Coligny, Nimrod.

Single Mauve.—L'Honneur d'Overeen, Haydn, Psyche, L'Unique.

Single Yellow.—Ida, Professor Blume, Koning Van Holland.

Single White.—Alba Maxima, Mont Blanc, Grandeur à Merveille, Grande Vidette, Seraphine, Gigantea, Snowball, Queen of Netherlands, Elfrida, Cloche magnifique, Mammoth, Nimrod.

ORCHIDS.

M. Linden, of Brussels, sent a well-grown collection of fifteen: this was awarded the first prize, and contained the very rare Vanda Cathcartii with five flowers well expanded. It is much to be regretted that this valuable plant should be so very rare. This plant was imported by M. Linden along with Vanda Gibbertii from Assam. A good representation of Vanda Cathcartii is to be found in Hooker's "Himalayan Plants." This collection also contained Cypripedium hirsutissimum with eight flowers, Ada aurantiaca, Brassavola glauca, five flowers, Miltonia cuneata, not so well known as it deserves to be, four varieties of Vanda tricolor, two of Phalaenopsis, &c.

M. Ambroise Verschaffelt, of Ghent, took the first prize for a collection of ten Orchids, comprising, amongst others, the rare Brassavola Digbyana finely in bloom, Cypripedium villosum and hirsutissimum, Phalaenopsis grandiflora, Schilleriana, and amabilis, Dendrobium albo-sanguineum, a fine strong plant, Cattleya Trianaei, pale variety.

Cypripedium villosum, with sixteen flowers, from M. de Cannart d'Harmale, took the first prize. Vanda tricolor, from M. Meulman, second for the best Orchid in flower.

FRUITS.

Of Fruits there were several large collections, some of which contained a great variety of sorts, particularly of Apples that are unknown among us. The Apples that appeared to be in the best state of preservation were Court-Pendu-Plat, with which we are all familiar; Court-Pendu-Noir, a variety similar in shape to the former, but entirely of a dark mahogany colour; Reinette Montre, a good solid Apple, that keeps well, and is not unlike our Rymer, but more ribbed and puckered round the eye, as much so as the Calville Blanche. In the collection of 608 we observed a very handsome variety; it is of the size and shape of the Winter Pearmain, figured in the "British Pomology," and of a very brilliant orange-scarlet colour, with here and there broad broken bands of yellow. Some of the fruit were not so conical as others, and more like the Golden Reinette in shape. It is a fine, solid, and good keeping Apple. The name attached to it was La Bonne. In the same collection, we saw the same variety, under the name of Pomme Corail. Pomme de Châtaigne is also a good keeper, and a handsome conical Apple. There were some good specimens of Calville Blanche in almost all the collections, and in some cases, there were special exhibitions of that variety. Zoete Veen is a small flat Apple, about the size and shape of a Pomme d'Api; but a good deal covered with russet. It keeps well, and is an ornamental little Apple for the dessert; but the flavour is sweet and mawkish. Mère de Ménage we found under the name of Napoleon. A good number indicated an English origin; but it must have been a long time ago, for we have no such sorts now as Engel's Bellefleur. There was a large firm-looking Apple, with every indication of being an excellent sort, either for dessert or kitchen use. It is large, and with angular conical shape, and a great open eye like Blenheim Pippin. It is called Dubbeld Wyker Pippe. We were struck with a handsome medium-sized fruit, an improvement in size on Pearson's Plate, and not unlike it in appearance. The flesh is tender, yellowish, and richly flavoured. It is a fine, dessert Apple, and is now (April 7) perfectly firm and solid, showing no appearance of shrivelling. It is a pretty Apple, and is called Pepperappel. Its shape is short cylindrical, flat on the crown, and with a large closed eye. This was exhibited by 116. In the Reinette de Montbron we recognised our Cooke Pippin, of which the specimen was very good. Adams' Pearmain were also excellent. There were some splendid dishes of Golden

Pippin, as fresh and golden as ever they could have been in the days of John Evelyn, and looking defiance at Mr. T. A. Knight's theory of degeneration. In Hambour Rouge we recognised Norfolk Beesing. Zoete Winter Pipling is of the size and shape of Court-Pendu-Plat, but green, and with an orange cheek; the flesh is tender and sweet, with somewhat of the Newtown Pippin character about it; this we observed in the collection of H. J. de Greeve, of Amsterdam.

BOUQUETS.

These were by far the most attractive feature of the Exhibition, and we never looked upon anything more brilliant or more tasteful. A table 60 feet long and 9 feet wide, covered with white, had a row of table bouquets down its centre, and two rows of hand bouquets and wreaths on each side, and there were not more than two or three which did not display exquisite taste.

Wedding Bouquets.—The first prize was given to W. A. Zaline. Their outer row was white Camellias, second row white Lilac, third white Azalea, fourth Orange blossom, centre one white Camellia. A slight sprinkling of green foliage was among the Lilac and Orange blossoms. A deep lace encircled the whole.

Centre Pieces for Dinner Table.—The first prize went to A. Bernard. The centre piece was what we might call Miss March's design; the dish at the base was filled with Pansies; the stem was wreathed with the Golden-veined Japan Honeysuckle, and the top dish was filled with deep crimson Roses, well relieved by their healthy green foliage. One of the side pieces was a porcelain sarcophagus of an oblong square form, beautifully ornamented, and filled with Roses paler than those in the centre piece, and equally well relieved with foliage. The second side piece was a tureen-shaped vase of porcelain of an oval form, filled with Orchids, Cypripediums, and other rare plants, and with a fringe of bright green moss. This was incongruous, both the side pieces should have been alike, and if both had been like the first side piece the three would have been most effective table bouquets.

Table Bouquets.—We do not see the distinction between this class and the preceding, and most certainly the three bouquets to which were awarded the first prize in this class were the most effective exhibited, and only suited for the centre of a dinner table. It was to G. Van den Berg. The centre piece was a solid, cut glass shaft, 2 feet high, and the dish at the top had a pyramidal-shaped bouquet, formed of Amaryllis, Chinese Primulas, Abutilons, Roses, Epacris Metrosideros, Azaleas, Camellias, and the summit was a plume of Dracena leaves; the whole relieved with fronds of various Ferns. The two side pieces were of similar form to the centre, but lower, and filled similarly.

Ball-room Bouquets.—The first prize to M. G. Moens, Antwerp. These were of red and white Camellias, set, as it were, among single flowers of a pale blue Hyacinth, and fringed with fronds of Maiden-hair and other Ferns.

All the hand bouquets were fully 15 inches in diameter, and we will take this opportunity of recording our deprecation of such an excessive size. It is an inexcusable excess, and a lady with such a sheaf of flowers seems encumbered by it.

We have some notes upon the wreaths, but must postpone publishing them until a future opportunity.

IMPLEMENTS, ETC.

In the galleries were arranged the implements, garden chairs, books on botany and gardening, ornamental figures, and fruits.

The zinc work, bronzed, was very effective, and creditable to Mr. ———, of Amsterdam, the manufacturer. The flower-baskets, with stands within them on which to elevate the pots to various heights, were very elegant.

In iron work, M. Lebrun, of Brussels, and some other manufacturers, exhibited many articles deserving not only praise, but purchase. Especially so were the garden chairs, with seats and backs formed of arched iron laths, very soft (if iron admits of such description) by being elastic, with stools to match, to keep the feet of the sitter from resting on the ground. The Swiss bird cages were also very light and artistic, and, if anything, would tend to reconcile the prisoner to his confinement.

There was also a pagoda-shaped pigeonry with a pheasantry beneath, painted to imitate cane, and suitable for placing in, and moving to, any part of pleasure grounds.

One maker had what he termed "a revolving shovel." It is really nine broad hoes fixed on a revolving axis, and pushed or dragged by means of a stout five-foot handle. We should call it "a revolving surface-stirrer," and, in light soils, or garden soil of ordinary loam, we have no doubt it is an effective and rapid-doing implement.

The flower-pots of one manufacturer were very ornamental. The earth bakes of a dark olive colour, and the raised trophies on their sides were bold and artistic. The edges of the pots, instead of the usual monotonous sausage-form, were cut in large half-diamonds. Some were circular, others were of angled forms.

An apple and pear gatherer exhibited for tall standard trees is much more effective and less liable to be out of order than the usual averruncators, as they are sometimes called. It is a pole with a wire cup fixed by a socket to its top, and the edges of the cup toothed like the daisy-rake, which readily divides the stalk of the fruit to be gathered.

Several kinds of garden labels were exhibited, but none novel, and we know that of the old ones none excel zinc, written upon by a proper ink. But there was a little machine exhibited by Ernst Metz, of Erfurt, for the stamping figures on thin leaden tallies, which was a novel application of one of the machines for stamping on paper. The figures 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, are in a row fixed in the foot of the little machine; the strip of lead to be stamped is placed over the desired figure, and a slight blow on an iron handle, the surface of which extends along the row of figures, gives the required impression.

The Exhibition was opened on the 7th to the public, and was well thronged by gentlemen, but the ladies were very few, and, to our English notions, singularly deficient in handsome costume. Our floral fêtes are celebrated for their attendance of beautiful, gracefully-dressed women; but the Netherlands' ladies, perhaps exercising a sound discretion, avoid being compared with the flowers.

ROYAL HORTICULTURAL SOCIETY.

FLORAL COMMITTEE, April 4th.—An increasing interest seems to be taken in these meetings. Associated as they now are with the scientific purposes of the Society, we may look forward to the enjoyment of many agreeable and profitably-spent hours on the days on which these meetings are held. Few, if any, of the older Fellows of the Society can remember a more beautiful exhibition, even in the most prosperous days of the Regent Street gatherings, than was to be seen on Tuesday last, at the Gardens at South Kensington. It is most gratifying to find that the spirit of horticulture still exists, and that its late ominous symptoms of decay have vanished; and we earnestly hope that every Fellow will do the best in his or her power to impart fresh and continued vigour to all the proceedings of the Society.

The following plants received certificates, Mr. Veitch exhibiting a large collection of plants. A first-class certificate was awarded to Maranta Veitchii, a plant with beautiful foliage, the leaves marbled, shaded green. A special certificate was awarded to a group of Anthurium Schertzerianum, neatly arranged in a basket, as being a specimen of high cultivation; and a special certificate was also awarded for the general collection in which there were many valuable and well-grown specimens; a basket of young plants of Azalea Stella was very conspicuous; Azalea Mercury, a rosy lilac flower of good form, a very promising variety, which was requested to be seen again; of Hoteia japonica, once known as Spiraea japonica, four well-grown plants were exhibited in full flower. This plant was sent to prove its value as an early-forcing flower most useful for table-decoration, or for cutting for bouquets; Dendrobium macropophyllum, emitting the most powerful scent of Rhubarb—this plant when it produces more vigorous spikes of flowers will be a first-rate Orchid. Several other Orchids of great beauty were to be seen in this collection. We also noticed a Peperomia species, Rhododendron Princess Helena, &c. Mr. Veitch also exhibited for Mr. Maxwell, two small plants of a variegated Cineraria maritima. The sombre grey tint of

the foliage of this plant was not much enlivened by its white variegation.

Messrs. Backhouse, York, received a first-class certificate for a new bright blue *Hepatica angulosa*, the flowers and foliage much larger than the usual form; and for *Phycella* sp. (*Hippeastrum*?), with small, intensely bright orange and scarlet flowers, valuable for hybridising purposes.

Mr. Bull exhibited several new and rare plants, the gem of his collection, and, indeed, of the whole Exhibition, was a superb specimen of *Bertolonia margaritacea*. This plant is one of Mr. Weir's collecting, some few plants of which were balloted for a few years ago, and we regret to learn that nearly all have been lost. As a fine-foliaged plant it cannot be surpassed; requiring the greatest care and the protection of a stove it must remain scarce for some time. A special certificate was awarded for this fine specimen, which had received a first-class certificate in 1862. *Polystichum ordinatum*, also from Mr. Bull, had a second-class certificate, and from the same exhibitor came *Acrophorus variegatus*; *Aralia heteromorpha*, with various forms of leaves; *Cupania undulata*, requested to be seen again; two seedling *Petunias*, *Polygonatum verticillatum argenteo-striatum*, a most beautiful variegated form of Solomon's Seal, exhibited in 1862, by Mr. Standish, as *P. oppositifolium*, when it was awarded a first-class certificate; *Polygonatum verticillatum aureo-striatum*, the plant too small for determining its merits; and *Adiantum robustum* with one frond. Mr. Bull's collection contained fine specimens of *Camellias*, *Imantophyllum*, &c., and received a special certificate.

J. J. Blandy, Esq., sent two large boxes of cut *Camellias*; some cut specimens of a dull red *Camellia* with a blue metallic tint, supposed to be an Italian variety, but the name could not be ascertained; also some cut specimens of *Salvia Regia*, with bright scarlet spikes of medium-sized flowers, useful as a decorative plant. The seeds of this *Salvia* were sent to the Society by their collector, Mr. Hartweg, twenty-five years ago, and was considered one of the good things of former days. Mr. Pilcher, gardener to S. Rucker, Esq., sent several valuable Orchids. First-class certificates were awarded to *Cypripedium concolor*, a new and distinct form of this genus, a dwarf-growing plant, pale yellow flowers, minutely spotted, with broad oblong wings; *Odontoglossum Lindleyanum*, one of Mr. Weir's collecting, dull yellow flowers with large brownish markings; *Chytroglossum manicæ-leonis*, a miniature form of Orchid, both rare and new, bearing a graceful little spike of greenish flowers, the wings strongly marked with white lobes: this plant received a certificate as a botanical curiosity. John Day, Esq., sent several fine Orchids, and first-class certificates were awarded to *Oncidium amictum*, *Odontoglossum gloriosum*, very handsome and worthy of its name; also *Dendrobium litiiflorum*, which received a first-class certificate in 1863. Among the collection were *Leptotes tenuis*, Brazil, with singular Rush-like foliage, and an Orchid from Assam with brown and yellow flowers on an erect spike, very distinct, and apparently not known. Mr. Jay, Norwich, sent a seedling *Cineraria*, Queen of the Beauties; and Mr. Williams, Holloway, received a first-class certificate for *Colocasia longiloba*, the white stem beautifully marked with fine black lines, a distinct variety in this numerous and variously-named family. Mr. Williams also sent *Phalænopsis amabilis*, a distinct and fine variety, dark spotted centre, and very dark green foliage, the flowers more circular in the outline than the usual form; and an *Azalea*, *Alexandra*, a white flower with too green a centre. A special certificate was awarded for the general collection, which contained fine specimens of *Yucca filamentosa* variegata, *Pandanus reflexus*, *Dasyllirion acrotrichum*, *Hemerocallis Kwanzo flore pleno*, *Pandanus elegantissimus*, and *Xanthorrhoea australis*. Mr. Turner sent cut specimens of two splendid new Hybrid Perpetual Roses, both of first-rate quality, *Pierre Notting* and *Madame Victor Verdier*.

W. W. Saunders, Esq., again contributed largely from his valuable collection of plants. First-class certificates were awarded to *Miconia flammea*, one of Mr. Weir's plants, fine handsome foliage; *Cinchona nobilis*, an interesting medical plant, and one of those from which quinine is prepared, which we regret (though doubtless unintentionally), was not taken notice of. *Pelargonium filipendulifolium*, with very curious, long, cut leaves, most useful for covering hanging-baskets, was awarded a special certificate. Among

other curious plants in Mr. Saunders's collection was a specimen of *Dorstenia* from Old Calabar, with singular green inflorescence. Mr. Hooper sent a seedling *Amaryllis Hooperi*, as good as *Amaryllis Sweetii*, which it too much resembled.

Mr. Salter, Hammersmith, exhibited six pots of *Convallaria multiflora variegata*, for which a special certificate was awarded. We cannot speak too highly of this beautifully variegated form of the Lily of the Valley; there is an elegance in the white-lined variegation peculiar to itself. This ornamental-foliaged plant should be in every collection. Messrs. Cutbush sent fine collections of *Hyacinths*, *Tulips*, and *Narcissi*, each of which received a special certificate. Messrs. Cutbush also sent three pots of well-grown forced Solomon's Seal, and three new *Hyacinths* of 1865—*Hogarth*, a single shaded rose with white centre, a very promising variety, taking the place among the reds which *Argus* does among the blues; *Cuvier*, a fine, single, deep, shaded blue, very good—first-class certificate; and *La Française*, a single white faintly tinted with pink, a very fine spike with large bells—first-class certificate. Among the novelties of the day we noticed a table liberally supplied by the Council with refreshment for the members of the Committees, which was most gratefully accepted by them.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. Although prizes were offered for dessert Pears, dessert and kitchen Apples, and forced Strawberries, the subjects for examination were very limited. Mr. Ruffett, gardener to Viscount Palmerston, had a first-class certificate for the following Apples—viz., *Ashmead's Kernel*, very good, *Claygate Pearmain*, *Pearson's Plate*, not so flat as usual, *Old Nonpareil*, perhaps the best flavoured of those exhibited, *Golden Harvey*, and *Sturmer Pippin*; in addition to which he had fine examples of *Scarlet Nonpareil* and *Grange's Pearmain*. To Mr. Cox, gardener to W. Wells, Esq., *Redleaf*, a second-class certificate was awarded. Among his collection were *Fornosa Pippin*, *Nonpareil*, *Court of Wick*, *Russet Nonpareil*, *Ribston Pippin*, *Hampshire Yellow*, *Fearn's Pippin*, *Scarlet Pearmain*, besides which there were *Brabant Bellefleur*, a kitchen Apple, and an Apple called *Golden Harvey*, but to all appearance not that sort.

The only exhibitor of Strawberries was Mr. A. Ingram, gardener to J. J. Blandy, Esq., Reading, who had a good dish of *Keens' Seedling*, for which he received a first-class certificate, and he likewise contributed a dish of *Ne Plus Meuris* Pears. A special certificate was awarded to Mr. Chapman, gardener to His Highness Halim Pacha, Shoubrah Palace, Cairo, for a small collection of fruit, consisting of two large and fine seedling Lemons; a large, round, and somewhat flattened Orange of a deep reddish orange colour; a green and white speckled fruit; and two kinds of Nuts brought from Upper Egypt by *Mehemet Ali*, but what these fruits were neither Mr. Chapman nor any of the Committee could determine. Mr. Chapman also sent *Ash-leaved Kidney* and *Early Handsworth Potatoes* planted in the end of last November, and taken up in the beginning of February this year. The Potato, Mr. Chapman observed in a letter to the Committee, was not cultivated in Egypt, but from the specimens sent, which were very clean, healthy, and well grown, there could be no doubt that it might be successfully grown in that country.

A SCIENTIFIC meeting was held on the same day as the above Committees, J. J. Blandy, Esq., in the chair.

The Chairman regretted to inform the meeting, that in consequence of illness, the Rev. M. J. Berkeley was unable to attend, but the Rev. Joshua Dix, and G. F. Wilson, Esq., the chairmen of the Floral and Fruit Committees, would read over the list of awards, and offer what remarks they might think necessary, after which Mr. Bateman would make some observations, more especially with regard to Orchids.

Mr. Bateman regretted that Mr. Berkeley had been laid up, but a paper had been sent by that gentleman with reference to the Chinese *Primulas* exhibited at the last meeting, and which would now be read by Colonel Scott.

In this Mr. Berkeley stated that he had at the last meeting called attention to a peculiar variety of Chinese *Primrose* in the collection of Messrs. Windebank and Kingsbury, of Southampton, which he had found to differ from all the monstrous forms described by *Kramer*. Each stamen was

replaced by a flower more or less perfect, the parts in some being like ordinary petals, in others like complete florets, in others again merely hollow tubes or threads. Among *Primulas*, continued Mr. Berkeley, there were two forms of flowers, the pin-eyed and the thrum-eyed, and Mr. Darwin had shown that these two forms differed in fertility according as they were impregnated. The thrum-eyed, unless impregnated artificially, are barren, but if the pollen of the pin-eyed be applied to them they produce more seed than the pin-eyed when impregnated with the thrum-eyed. Impregnating with pin-eyed flowers was the easier mode, but the quantity of seeds produced was small. It would be interesting to find out whether the best flowers in a florist's point of view came from the thrum-eyed or the pin-eyed, and information on that point would be desirable.

Mr. Bateman then commenced by directing attention to some rare *Cypripediums* which were exhibited. The name had been given to the genus by some gallant classical botanist, and signified Venus's slipper, but he hoped Venus did not, like a slattern, wear her slippers down at the heels like all the species of this genus. Thirty years ago there were only two species in this country, but now there were twenty distinct kinds; and, having had the privilege of inspecting Dr. Lindley's herbarium, he could say that it contained dried specimens of many more yet to be introduced, especially from South America, and which would vie in beauty with the very best of those which we now possessed. They had before them a specimen of *Cypripedium hirsutissimum* from Mr. Veitch, and one of *C. Lowii*, which had been introduced from Borneo by Messrs. Low of Clapton, and though the plant coming from Mr. Veitch was well grown, it yet gave but an imperfect idea of what it would ultimately be. Another very interesting species to which he would now refer was sent home by the Rev. Mr. Parish, an Indian missionary, and differed from all tropical *Cypripediums* in the leaves being purple beneath and beautifully marbled above, while the flowers were yellow. It had been named *concolor*, and a description and plate of it would shortly appear in the "Botanical Magazine." *Cypripediums* were very easily grown, and lasted in flower for a length of time, and it would be very interesting for ladies and gentlemen to form collections of this genus alone. All of them would succeed under cool treatment, and persons about to commence Orchid-growing on a small scale could not select a more suitable genus of this glorious tribe of plants. The next genus of cool Orchids which he would mention was the *Odontoglossums*. They were found growing at an elevation of 5000 feet in New Grenada, Mexico, and Peru, and they were rapidly rising in popularity and favour, and were as easy to manage in the climate of a warm greenhouse as any other Orchid. *Odontoglossum Pescatorei* had been in bloom for two months, and was likely to last for two months more, and he would mention that Mr. Anderson, of Meadowbank, had grown it with as many as a hundred flowers on a spike. *Odontoglossum pulchellum*, of which a plant was exhibited by Mr. Rucker, having snow white blossoms, was peculiarly well adapted as an ornament to ladies with dark hair or dark silk dresses, and it had this property, that the flowers might be used at half a dozen different balls or *soirées*. *Odontoglossum gloriosum* was another splendid species, found at an elevation of 9 or 10,000 feet in the Andes, near Bogota. It had been introduced by the Society, and subsequently by Messrs. Low, and wild specimens had sometimes a hundred flowers on a spike. A third species was *Odontoglossum Lindleyanum*, so named by Dr. Reichenbach in compliment to his brother Orchidist Dr. Lindley. It had also been received from Mr. Weir. Of *Calogyne cristata* a specimen was exhibited by Mr. Veitch; it was also capable of cool treatment, coming from the slopes of the Himalayas. It would remain in bloom for weeks, nay months, and was so easily flowered that a traffic was springing up with it at Covent Garden and Manchester. Its colours were white and gold, and hence it was sought after for bridal bouquets. *Chysis bracteescens* presented the same colours, and could be used for the same purpose; and still more beautiful was *Phalenopsis amabilis*, which was also before the meeting. Mr. Bateman related that when this Orchid was first sent over from Manila to Messrs. Rolleston of Tooting, the late Duke of Devonshire was so struck with its beauty that he wanted to purchase it; and

though informed that it was not for sale, would take no denial, but gave Messrs. Rolleston a blank cheque to fill in with whatever amount they valued it at, and they put down £100; but in consequence of the importations which had been made, plants of it, however, might now be had for as many shillings. *Dendrobium lituiflorum* and the New South Wales *Dendrobium speciosum* were then referred to. The latter, it was observed, was twenty years in this country before it flowered; and the reason of this was, that in former days the atmosphere of Orchid-houses was kept so warm and moist, that luxuriant leaf-growth was encouraged at the expense of flowers; but cultivators had become alive to the importance of a more sensible mode of treatment—only keep it cool, and nothing could be more easily grown, it would then flower as readily as the least shy-flowering of the race. To any one desirous of cultivating a particular genus of Orchids, *Dendrobium* alone would furnish two hundred species. He would now notice a small box of beautiful cut flowers, which had just come from Mr. Day, of Tottenham, among which were *Dendrobium Farmeri*, a Mexican *Lycaste*, a *Cattleya*, a *Galeandra*, a *Leptotes*, a *Calogyne*, and *Oncidium nubigenum*, which produced spikes a yard long and grew at an elevation of 10,000 feet, in regions of snow and hail, and even frost, teaching the lesson that a vast number of Orchids could be grown in an ordinary greenhouse temperature. Before leaving *Dendrobiums* he must notice a new species, though not in flower, sent by the Rev. Mr. Parish to Messrs. Low, and which was called *senile*, being covered with white hairs, and being among Orchids what the Old Man Cactus was among that family. The flowers were golden yellow, and he (Mr. Bateman) had no doubt that it would create quite a furor in time. Mr. Bateman then briefly noticed the other plants shown, among which were *Chytroglossum manicæ-leonis* and *auratum* from Brazil, and *Hepatica angulosa* from Messrs. Backhouse, the latter not a mere variety, but a new and (as the meeting would perceive), a very handsome species, and which, he had no doubt, would prove perfectly hardy, as he saw it coming vigorously in bloom after standing the winter in North Staffordshire. There was also a species of *Phycella* from Messrs. Backhouse, the orange scarlet flowers of which were the most brilliant colour he had ever seen in the vegetable kingdom, in that respect far exceeding even *Lælia cinnabarina*. *Bertolonia margaritacea*, which was exhibited by Mr. Bull, was another plant of great beauty, the foliage being sprinkled all over as if with pearls, on which account it had received its name, *margaritacea*. Other plants of interest were *Polygonatum verticillatum*, Mr. Bull's *Imantophyllum miniatum* from Natal, a variegated-leaved Lily of the Valley from Mr. Salter, which was likely to be very popular, and *Ficus Cooperi*, of which the habitat was uncertain, but it had probably come from the Indian Archipelago. The fruit was also there, but it had not been ascertained whether it was poisonous or not. Though Figs were wholesome in general, some were poisonous; but he hoped that some zealous horticulturist would come forward in the interest of science, and *pro bono publico*, eat the Fig, and so settle the point. The Fruit Committee, whose duty it was to taste all fruits submitted to them, had wanted the courage to put the matter to the test. Mr. Bateman then brought under the notice of the meeting what were called branch pots. Among Orchids some grew in the clefts of branches, and others sent roots along the arms of trees. The latter would not grow in ordinary pots, and were therefore kept on blocks; but after a few years, and sometimes a few months, a fungus appeared which destroyed the roots, and it became necessary, therefore, to shift the plants to other blocks. With large plants this was not of much consequence, but in the case of tender Orchids the matter was more serious. Having a scarce *Chytroglossum* to remove, he was led to consider whether something could not be invented which would prevent the necessity and danger of reblocking so frequently, and the idea occurred to him of having models of branches of trees made of pottery, and perforated at places; and the plants which he had tried in such branch pots had succeeded perfectly, and he had every reason to believe that shifting would not be required for many years. It appeared, however, that the idea of employing pottery to obviate the necessity of shifting had also occurred to Mr. Rucker, for on going to his place he found

plants growing on a drain-tile. Mr. Bateman stated that the blooms of the *Odontoglossum pulchellum*, shown by Mr. Rucker, and the *Camellias* shown by Mr. Blandy, had been kindly presented by these gentlemen to be balloted for by the ladies present.

With regard to the Tuesday meetings he wished to state that they had no connection with the Saturday shows, the latter were for miscellaneous plants; but to the Tuesday meetings anything new or curious should be sent. These, it had been arranged, were to take place every alternate Tuesday.

The meeting, we may remark, was even more numerously attended than the last, and the observations made by Mr. Bateman were listened to with the greatest attention.

WEEKLY SHOW, APRIL 8TH.—On this occasion Mr. Bull contributed specimens of *Drynaria mussefolia*, *Marattia elegans*, *Dicksonia antarctica*, *Gleichenia flabellata*, and *Athyrium Filix-femina sagittatum*; Messrs. Lee, stands of out *Camellias*; Mr. Ingram, gardener to Her Majesty, Frogmore, forced Pinks and Roses, Asparagus, Mushrooms, French Beans, and two excellent Pines (Smooth and Prickly-leaved Cayenne); and exhibitions of the usual character came from Messrs. Lucking and Greeves.

Her Majesty, accompanied by their Royal Highnesses the Princesses Helena and Louisa, and Prince Alfred, visited the Gardens on Thursday, the 6th inst.

THE ROYAL BOTANIC SOCIETY'S SECOND SPRING SHOW.—APRIL 8TH.

THE day was lovely, with bright sunshine and a soft mild atmosphere, and, as if in rivalry, the Roses had put on their rich robes of purple and scarlet—regal colours befitting the queen of flowers—while the Azaleas, Hyacinths, and Tulips were clothed in all the magnificence of oriental attire. The glow of colour which the tent presented was brilliant in the extreme, and this, coming after the cold and cheerless weather which we have passed through, made it seem as if at one bound we had sprung from winter into summer.

In Azaleas Mr. Turner of Slough, as usual, stood pre-eminent, his plants being covered with bloom, but having just enough of foliage apparent to relieve a blaze of colour, which otherwise would have been overpowering. They consisted of Iveryana, Holfordi, Criterion, Prince Jerome, Flower of the Day, and Empress Eugénie. Mr. Williams of Holloway came next with, among others, *Delecta*, Countess of Stamford, rich salmon scarlet, *Rubra plena*, and *Model*. Messrs. Lane were third, and they likewise contributed a numerous collection, which included President Claeys, Madame Verschaffelt, Advance, Duke of Cambridge, and other recent kinds, and many others older and better known. Among amateurs Mr. Todman, gardener to R. Hudson, Esq., Clapham Common, Mr. Wheeler, gardener to Sir F. Goldsmidt, Bart., and Mr. Young, Highgate, exhibited plants in good bloom, for which prizes were awarded in the order in which these exhibitors are named. In new kinds Mr. Turner was first with Mars, splendid orange scarlet, Madame A. Verschaffelt, pale rose bordered with white, and having crimson spots, and Advance, bright rose, another fine flower. Messrs. Lane came next with the two last-named and Duke of Cambridge, a large flower, rosy crimson with violet crimson spots; Mr. Todman being third with Flag of Truce, the best of its class, Prince of Orange, a beautiful orange red of fine form, and Madame A. Verschaffelt.

Of Roses, gorgeous plants in pots were furnished by Mr. W. Paul and Messrs. Paul & Son. Among those particularly noticeable were Victor Verdier with immense blooms, Senateur Vaisse, Beauty of Waltham, Jules Margottin, Mrs. William Paul, very rich in colour, Pierre Notting, dark red shaded with violet, John Hopper, Paul Delameilloray fine glowing colour, Le Rhone, Lord Clyde, Maurice Bernardin, Noisette Celine Forestier, and Teas President, Madame Willermoz, Rubens, Madame de St. Joseph in splendid bloom; Madame Damazin, with a profusion of its salmon-coloured blooms; and Marquise de Foucault. Equal prizes were awarded to both exhibitors; and for boxes containing very fine out blooms of the above and numerous other varieties, Messrs. Paul & Son were first, and Mr. W. Paul second,

the latter receiving in addition a first-class certificate for the new Tea Rose Maréchal Niel, with large, deep yellow, delightfully fragrant flowers, a variety which will doubtless take a prominent position among the Roses of its class. A new Hybrid Perpetual, Princess Mary of Cambridge, came from Messrs. Paul & Son; the colour was pale pink, with a flush of rose in the centre.

Hyacinths were again shown in large collections and in fine condition by Mr. W. Paul and Messrs. Cutbush, the latter also contributing fine collections of Early Tulips and Narcissus; whilst Messrs. E. G. Henderson again exhibited their beautiful Cyclamens. Of Cinerarias, too, there were good exhibitions from Messrs. Dobson and Mr. James, of Isleworth. The best were Duke of Cambridge, crimson self; Lord Elgin, rosy purple self; Snowflake, white with a dark disk; and Miss Smith, white, with a violet blue edge and dark disk. Prizes were given for both the above exhibitions; and Mr. Marcham, Hanwell, had a first-class certificate for Lord Amberley, a large-flowered, rich, violet plum self.

Miscellaneous flowering and fine-foliaged plants were exhibited by Messrs. Lee, Williams, Wheeler, and Young, and comprised Azaleas, Hedaromas, *Eriostemon buxifolium*, *Epacris*, *Tethratheca ericifolia*, *Vanda tricolor*, *Yuccas*, *Dracenas*, *Dicksonia antarctica*, *Cyathea Smithii*, *Cordylina indivisa*, *Maranta zebrina*, and *Pandanus javanicus variegatus*. Good plants of fine-foliaged *Begonias* were shown by Mr. Young, Mr. Wheeler, and Mr. Marcham, but did not present any novelty. *Camellias* and a collection of *Dracenas* came from Mr. Bull; also *Achyranthes Verschaffeltii*, which is the same as *Iresine Herbstii*, striped *Polygonatum verticillatum*, and *Bertolonia margaritacea*. To the latter a first-class certificate was given, and a similar award was made for *Camellia Bicolor de la Reine*, delicate rose edged with white, a very promising variety. Mr. Williams had first-class certificates for *Colocasia longiloba*, described in our Floral Committee report, and *Alsophila latebrosa*, with graceful spreading fronds. F. J. Graham, Esq., Cranford, likewise received a first-class certificate for his large-flowered Russian Violet, The Czar, which has been previously described, and to show the difference in point of size it was accompanied with flowers of the old kind. From Mr. Holland, gardener to R. Peake, Esq., Isleworth, came a nice collection of British Ferns, among which *Asplenium trichomanes Harrovii*, a slender, bright green, very pretty variety, received a first-class certificate; and from Mr. Bartlett, Hammersmith, some pots of Lily of the Valley.

MANETTI RECOLLECTIONS.

I RECEIVED from Mr. Harrison, of Darlington, the following Manetti recollections with permission to make use of them:—

"I am glad you are going to say a few words on the Manetti Rose stock. I am always pleased with your interesting articles on Roses and Rose-growing. The Rose has always been my favourite flower for upwards of fifty years, long before Perpetuals and Bourbons appeared. When I was a boy, twelve years of age, I went into the woods adjoining my father's nursery at Yarm, and budded Briars with Roses. I am now in my sixty-fifth year. Had it not been for the Manetti Rose stock one-tenth of the demand for Roses could not have been supplied. I came by the stock in the following way. It is due to Mr. Rivers. In the year 1842 I left the Yarm nursery, and went to York, and took some nursery ground. Mr. Thomas Appleby also commenced at York in the same year. We were, and are still, on friendly terms. We at that time purchased all our new Roses of Mr. Rivers—the dwarfs worked on the Dog Rose; and new Roses were then thought a great treat to get hold of the third or fourth year after their introduction (and then, perhaps, they were poor stunted plants), at from 5s. to 7s. 6d. each. Grafting was not then thought of, and we had to wait for the budding season. Half a dozen buds were considered a fair supply for a new Rose; and then we had to wait three or four years before we could supply the demand in the country. What will the gentlemen say to this who condemn the Manetti? When Mr. Rivers called on me at York Mr. Appleby put the question to him, 'Is

there no stock upon which Roses could be propagated quicker than on the Briar?' Mr. Rivers immediately said (the words are as fresh in my mind now as when he uttered them), "Well, I have a stock recommended to me called *Manetti*, but I have not used it much, and therefore I cannot say." We ordered 100 each; and then the third year after this, when Mr. Rivers called again, he was utterly astonished at the growth of the *Roses* on the *Manetti*. Mr. Appleby began to write about it, and sold a few dozens to the trade. I tried to persuade him to keep quiet only for four or five years, and we should both make a fortune, but he would not wait. I kept propagating on till I had nearly 100,000 of it, besides sending out all my dwarf *Roses* upon it. I may venture to say that I have made £100 a-year by the sale of this stock alone. I have sold it as low as 40s. per 1000; but this year I have sold none under 80s. per 1000; and I could have sold 50,000 since I disposed of all I had to spare. My stock next year will be immense. I keep two boys cutting out all the eyes, to prevent suckers, except two eyes at the top."

I have never seen three dozen suckers from the roots in my life. Briar *Roses* are very troublesome in this respect. The *Manetti* suckers are from the stock. Before you plant cut out the eyes, and tread the soil hard against the stock, and you will not be troubled, certainly not after the first year.—W. F. RADCLIFFE, *Tarrant Rushton, Blandford.*

STRAWBERRY CULTURE.

THE discussions which have been raised about *La Constante* afford one more proof of the strange vagaries of the Strawberry. Most persons agree that two of the very best sorts are *Rivers's Eliza* and *Carolina Superba*. I have given both these sorts ample trial. Of the quality of *Eliza* there can be no question; but both in the open air and under glass I found it a poor bearer, and so loth to put forth runners that propagation became difficult. As to *Carolina Superba*, it was inferior in every respect to both its reputed parents—namely, *British Queen* and *Old Pine*. On the other hand, *Old Pine* and *Downton* are usually considered bad bearers, but I do not find much cause to complain of them in this respect.

I proposed to a wire manufacturer last year to make some protection for Strawberries upon the principle of the *Pea* protectors, lately brought out at a shilling per yard run. He said they would be too expensive for general use. I wish Mr. Willis, who has so cleverly made the curate's viney to fold up, would contrive something of the kind, made in wire, for Strawberries. The difficulty of stowing such things away in winter is as great a drawback as first cost.

I recommend Strawberries to be cultivated two rows in each bed, the rows 18 inches from each other, the plants 1 foot apart in each row. After the first year's fruiting destroy each alternate plant, and fruit them one year more. To cover such a bed the protectors need not exceed 3 feet in width, and 15 inches in height over the crowns of the plants would probably be sufficient.

After the second year's fruiting I give my beds one year's rest from Strawberry culture by planting them with late *Siberian Broccoli*. These are off the succeeding May, and the beds are ready to receive either the earliest runners that can be had in July, or any of the preceding autumnal runners which have been planted in a reserve-bed. These last, however, will require 18 inches from plant to plant.—G. S.

P.S.—Allow me to ask if Mr. De Jonghe is correct when he says (page 233 of your Journal), that Strawberries must not be removed with a ball?

MY ORCHARD-HOUSE ON APRIL 7TH.

In giving a few words of record I have stated the date, because I think it will be interesting to some of your readers to know the periods of the blossoming of orchard-house trees in different parts of the empire, and by-and-by the periods of the ripening of the fruit—especially so, I think, if Mr. Bréant will add a date to his few pleasant words.

My *Apricots*, which have been masses of blossom these ten days past, have now set their fruit in myriads. I am

always at a loss to account for the failure of *Apricots* under glass which I sometimes hear of, for here they cannot be persuaded to fail, every tree, however small, setting quantities of fruit.

I read in Mr. Fish's "Doings" of his painting his trees with some not very agreeable composition, and of the trouble he seems to be in with birds out of doors and brown beetles within. I presume he means the common brown *Peach aphid* (*Aphis persicæ*), and I feel curious to learn why he calls them beetles. I suffer but little from them, for in my large house full of old trees, which is never fumigated, not one is to be seen. The simple remedy used here, 4 ozs. of quassia chips, and 4 ozs. of soft soap, to a gallon of soft water, boiled ten minutes, is always kept ready, and when applied with a brush never fails to kill them. I dislike painting the trees, it so spoils the beauty of their buds and blossoms.

I used formerly to wash my trees in December with a weak infusion of Gishurst, 4 ozs. to the gallon, but have now ceased to do so. My *Peach* and *Nectarine* trees are now in full bloom, and charming objects they are. It may be that Mr. Fish's houses are old and confined, which is the reason he is so troubled with insects.

Birds abound here, and at one time gave me much trouble by eating the buds of *Plums*, *Cherries*, and *Gooseberries* in winter and spring, but since I have had white worsted twisted round the ends of the twigs, so as to form a sort of net, with meshes 2 or 3 feet in diameter, not a bud has been touched. I should like Mr. F. to tell us if he has tried this should-be preventive. Perhaps *Bedfordshire* birds are more voracious than ours of *Hertfordshire*.

I almost fear I must complain of the bees which throng to my house in multitudes—for this reason, they are so numerous and so active that by 11 A.M. all the pollen is clean gathered from the anthers, and the little fellows are off with their golden balls of dust attached to their thighs. I searched yesterday about 12 for some pollen to fertilise with, but all was gone—yet there are hundreds of *Peach* and *Nectarine* trees in the house, and every tree crowded with blossoms. My fear is that the pollen will be cleared off before it has done its office. Oddly enough, I do not know of a single stock of bees in the neighbourhood.—T. R.

LA CONSTANTE STRAWBERRY.

HAVING grown *La Constante* three years I may, perhaps, be allowed to add a word or two to the discussion going on in your pages as to the merits of this fine Strawberry. In the first place I consider it thoroughly hardy.

Mine is a cold soil, becoming sodden and sticky in wet weather and very hard and dry in time of drought, but I have not as yet found *La Constante* suffer from either heat or cold. It is not a strong, but it is a healthy-growing variety, and runs enough, and soon enough to satisfy me. In this latter respect it would not, I dare say, satisfy a nurseryman who wanted to obtain a large stock quickly. It certainly is not soon over; on the contrary, it continues a long time in bearing. The fruit is not what I should call large, but it is of a fair size, and very handsome, and true to what I may call its typical shape.

As for flavour, in my humble opinion, no Strawberry approaches it, even *British Queen*, and I am borne out in this opinion by some friends who tasted it here when they came to see my *Roses* last June. I do not, however, think it can be called a heavy cropper. To sum up, I think that

1. It is a variety of healthy, though moderate, growth.
2. It is perfectly hardy.
3. It runs sufficiently.
4. It is fair-sized and very handsome.
5. It is unsurpassed in flavour.
6. It lasts a long time in bearing; but,
7. It is not a heavy cropper.

Mr. Radclyffe says it would be a good parent to raise seedlings from. Will he be so kind as to suggest which cross he would prefer?—the pollen of *La Constante* to *President*, or vice versa. I made a number of crosses last year, amongst others *La Constante* and *Filbert Pine*, using the latter as the seed-bearer. I should be glad of any hints on this subject.—P.

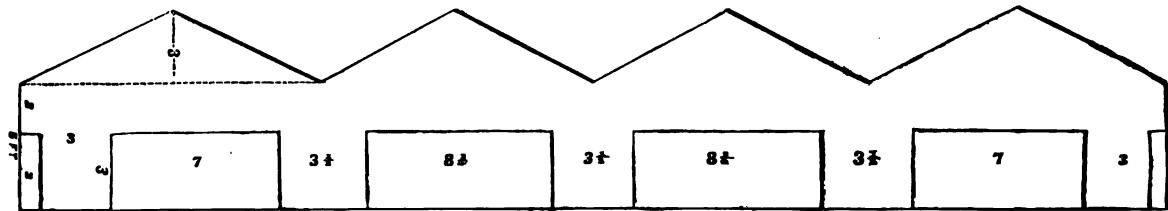
CONSTRUCTION OF A PINE STOVE.

HAVING the intention during this summer to build a fruiting Pine-stove, the idea has occurred to me, that as the building of such houses has not been much discussed of late, you might, perhaps, be induced to publish my plans, and that by this means others who had the like intention might meet me in the same spirit, or, failing these, some one of more matured knowledge would, perhaps, tell me where the weak points in my plans are. Building hothouses is not to be undertaken lightly, especially when there is an intention of deviating from established forms.

I will try not to enter upon the cultivation of the Pine Apple any farther than is necessary to explain my views, as

I cannot lay claim to having it at my finger-ends, much less can I point to the prizes I have won; suffice it to say I am only forming the plans of what is to be my first fruiting-house.

Let us commence with the clear understanding that what I want is a house capable of ripening Pines at any period of the year; and therefore one in which a summer heat cannot be kept up in spite of any weather, I must consider does not come up to my standard. The next point is the cost of erection. This I cannot go into, even if desirable, but I think I can make my idea clear enough without doing so. I will take instead the size of houses required to give a



No. 1.—SECTION.

fixed number of square feet of pit room; in my plan there are 1351. See ground plan No. 1. The house is 50 feet long and 48 feet wide, and in it there are four beds—Two are 44 ft. $\times$ 7 feet = $308 \times 2 = 616$ } = 1351 square ft.
Two are 42 ft. $\times$ 8 ft. 9 in. = $367 \frac{1}{2} \times 2 = 735$ }

Plan No. 2 is a lean-to 193 feet long by 14 feet wide, the one bed is 187 feet $\times$ 7 feet = 1309 square feet. I have

given it the advantage of a half span, but when the back wall is reduced by this means to 8 feet high it is still evident to all that the expense would be too great.

Plan No. 3 is that of a span-roofed house 100 feet long and 24 wide; in this there are two beds 94 feet $\times$ 7 feet = $658 \times 2 = 1316$ square feet. This house, you will see, I have made twice the length and half the width of mine; and the height, by the dotted line, from the top of the beds to the apex is 6 feet.

Thus the choice as regards cost rests between Nos. 1 and 3, but I am afraid I must throw out No. 3, because it would be next to impossible to keep up the required heat by 30° or more during such cold windy days as we have had of late. No. 1 is nearly square: therefore, as the wind only blows on one side at once, it cannot have more than 50 feet in

length exposed to its action. No. 3 exposes double that length. Again: No. 1 has four spans of 12 feet each, No. 3 one of 24 feet. For a 12-foot span the roof should rise 3 feet above the sides, and for a 24-foot span 6 feet. No. 3 then, in addition, exposes 100 feet by 3, or 300 square feet of roof to the direct action of the wind more than No. 1. If any one knows of such a house that can be kept up to my standard of 90° in any weather, I shall be glad to hear how many rows of pipes it has. I am proposing to give mine six rows next to each side, and four rows in each path, making twenty-four rows in all of four-inch piping.

I will now take the question of bottom heat, and I think

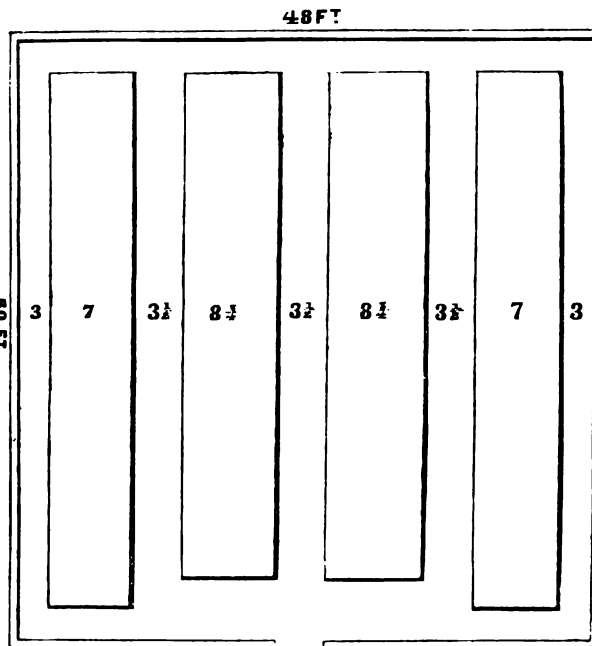
it is one that has been much neglected. I have often seen in your paper and elsewhere plans given of houses that are supposed to be good, after this fashion: in a seven-foot pit four rows of four-inch pipes covered with rubble, and above the rubble the pit is filled with plunging material, the bottoms of the pots coming within a foot of these pipes. Now, in a seven-foot pit there is only room for three rows of

large fruiting plants, so these plants have one four-inch pipe and a third each. Mr. Rivers told us a short time since the heat he supposed he obtained for his pot Vines by standing them on a bare four-inch pipe; I do not remember it now, but I think it was much more than Pine-growers would like to use. I therefore can only conclude that by this plan the heat is lost; and I have a very strong opinion that if, instead of these four rows of pipes being buried in the rubble, two of them were put under flags or a four-and-a-half-inch brick arch, they would give a bottom heat of 100° without any assistance from plunging material; but I think there is yet another mistake—a pipe is not very hot if when water is poured over it no steam is given off; and will not these pipes, if they are hot enough to do any good, from this cause con-

tinually tend to spoil the drainage, even if they do no harm to the roots of the plants?—G. H.

[In accordance with your wish, we will add a few remarks just as they occur to us.

1. Your plan, No. 1, consisting of a space 48 feet by 50, divided into four spans, and four beds below these spans, is, we think, new as applied to Pine-beds, but the idea is not new so far as combining different spans, even if each should form a distinct house, as descriptions of such houses at Messrs. Lanes', in previous volumes, would testify. Sections of similar houses were also given in "The Heating Manual." That, however, does not render your plan less desirable.



No. 1.—GROUND PLAN.

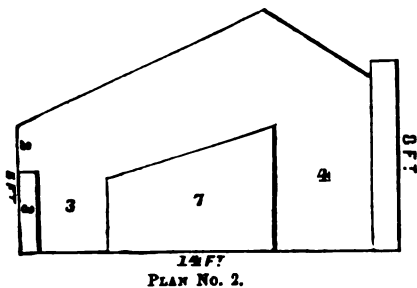
One advantage you will derive is the uniform depth of your beds under each span, so that the light will play on both sides alike. Three feet in depth will be ample, with pipes below for heating, whether you use plunging material or soil, and provided the pipes are not far from the pots we do not think it matters what you cover them with. We should think three pipes in each bed ample.

2. The side walls, brick 3 feet and glass 2 feet, being 5 feet, the height to the apex 8 feet, and the height to the gutter between the ridges 5 feet, a tall man could not walk upright even along your central pathways. They ought to be at least a foot more in height, and the apex or ridges in proportion. This will necessitate a greater surface of glass, and thus so far interfere with your calculations. It would be premature to say anything as to how the house and roof are to be braced, &c., but stout side walls are a great advantage in this respect.

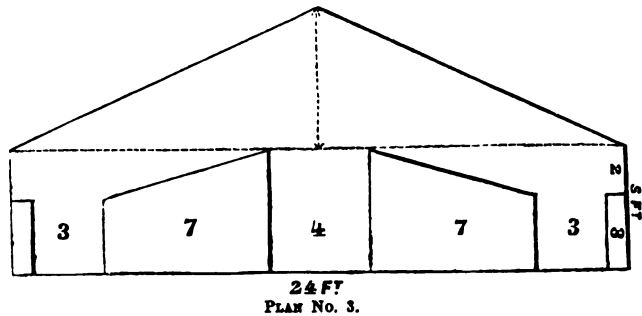
3. In your plan, No. 3, there would be more glass for the

space exposed to the direct action of the wind; and though piercing winds tell much in cooling the glass there they come but seldom, whilst in cold and frosty weather there is a continual radiation of heat, unless when a bright sun is shining on it, and then the heat inside will be more equable in proportion to the amount of atmospheric air enclosed. The ridge in No. 3 might also be a foot lower without detriment. If the central pathway were $3\frac{1}{2}$ feet, as in No. 1, and the addition put to the beds, you would have nearly 100 feet more. By making two spans of the roof of No. 3, it would be just the same as the half of No. 1, and the side walls would give strength to the structure. You certainly gain in your proposed arrangement of one large house, in saving one pathway. So far as radiation of heat is concerned, the mere form of the roof enclosing a similar space is of but little consequence.

4. If such a large house were to be entirely filled with fruiting plants about the same stage, we could see no ob-



PLAN No. 2.

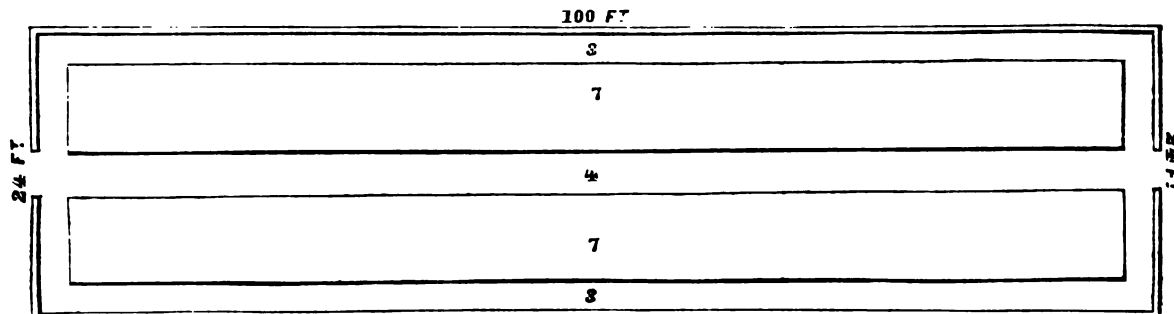


PLAN No. 3.

jection to it; but if different beds contained plants in different stages of growth, we would rather prefer being able to give them different treatment as respects temperature and atmospheric moisture. In such a case the hipped lean-to of No. 2, or the span or rather double span-roof of No. 3, with several divisions in the 100-foot length, would please us better. That is no reason, however, why you should not carry out your own proposed plan.

5. Some thirty years ago we helped to manage a house for Vines and Pines very much the same as your section of

No. 3, only it was some 3 feet higher at the apex, and the central path was elevated so as to be about 1 foot below the stone curb of the Pine-beds. The Vines were brought in below the wall plate at each side. The house was heated by a flue on each side, and also by another beneath the central pathway. The side flues were only worked in severe weather in winter, for fear of starting the Vines. When the Vines were started all were put in action. The house was kept at very nearly 60° by means of the centre flue, bottom heat being given by tan, and Pines did well as suc-



No. 3.—GROUND PLAN.

cessions, and fine Grapes were also obtained. Hot water was just then becoming popular. The gardener was celebrated as a Pine grower, but rarely or never did the fruiting Pines in a low house like No. 2, have 90° from artificial heat in winter. A rise from sun heat was a different affair. We certainly would not have kept such a house, as section No. 3, at 90° , in such weather as we have lately had; but in very cold nights we would have been satisfied with 20° or even 30° less. We should hesitate to give any plants 90° for a continuance, or as a standard, in dark winter weather.

6. With these hints and modifications kept in mind, we have no doubt that No. 1 and No. 3 altered will answer well, especially where coals are cheap and good. On the other hand, we think that old-fashioned No. 2 is rather summarily dismissed, especially on the question of cost. We presume this refers to the eight-foot wall at the back, though that might be lower. First cost is not always a loss. In cold districts, and where fuel from carriage is expensive, such a house would be decidedly the most economical. If

partly sunk—say 2 feet under the ground level, it would be less exposed to the wind. If on high ground in these circumstances we would even dispense with the hip roof at the back, and have all the glass facing the south, or have only a short hip for gaining room, and lessening the height of the wall. The front path shown is very useful, but with double sashes for the width, that path might be dispensed with, and all from the pathway to the front wall turned into a bed, and the front rows be looked to from the outside. This, with a $3\frac{1}{2}$ -foot pathway, would increase the amount of available space in the bed by fully 3 feet, making it 10 instead of 7. Such a house, especially if sunk a little, could be more easily kept at a moist heat when necessary, than a house glass on all sides. In such a low house without a front path, so far as we recollect, very fine Pines were grown at Trentham. The question as to first cost in such houses is of less importance than the advantage of abundant light from glass on all sides, and as that will be affected by the after-consumption and cost of fuel.—R. F.]

WHAT IS THE BEST POSITION FOR FORCING STRAWBERRIES?

THE excellent and practical notes on this subject, at page 189, by your esteemed correspondent Mr. Ingram induce me to offer a few additional observations deduced from my own experience. Mr. Ingram endorses my views generally on forcing Strawberries, and agrees with me as to the essentials for their successful growth—viz., light or close proximity to the glass, and ample ventilation—air above, below, and all round the plants—to which Mr. Ingram adds, "the roots should always be kept cool and moist."

Though identical in our views on the subject, we differ as to the best mode of securing these conditions. I, like Mr. Ingram, was led to the idea of having shelves fixed on the roofs of houses for forcing Strawberries from "finding that Strawberries always succeeded on shelves placed in the front of lean-to houses close to where the roof-lights rested on the front supporting plate, and where a little air constantly entered; at the same time the pot was shaded from the sun by the thickness of the plate." This was one reason, but another very forcible one was that plants on a back shelf, where they received more light, a little air constantly entering, and the pots receiving a little warmth from the sun, were found to do better than those on the front shelf from December to March, when the objections raised by Mr. Ingram as to the sun's rays acting on the pots and destroying or injuring the roots came into force and reversed the case, the plants on the front shelf being the best after February.

Acting on experience, and there being a deficiency of accommodation for Strawberry plants, I was under the necessity of furnishing a house with shelves suspended like the front shelves from the roof. An early vinery being then empty and awaiting the planting of the Vines in spring, the Strawberries were placed on the shelves in December, and the result was a crop of Black Prince Strawberries in March. In that month the Vines were planted, and the shelves re-occupied with Strawberries. These did not afford so good a crop as the first, though the advanced season was more in their favour. Mr. Ingram very appropriately describes the cause—"the scorching effects of the sun in the bright drying weather of March" and April had done the mischief. The shelves answering so well for the first crop, more were obtained and fixed on the roof of a span-roofed house, having the ends due north and south, and the plants in this afforded a good crop. The only reason that could be assigned was, that the sun's rays did not heat the pots so much as in the lean-to, they not receiving the direct mid-day sun, the foliage affording the pots a slight shade, and in the afternoon or morning the sun was not so powerful as to injure the plants.

Deciding according to the evidence in these cases the plants can neither have too much light nor too sunny a situation from December to March, a lean-to being then the best; but after February they can have too sunny a position, unless prompt measures be taken to protect the pots, which being done, too much light cannot be given. A span-roofed house is then the best.

The shelves being moveable, and capable of being fixed in any house not filled with its regular occupants, they can be put up in any house securing the conditions which, according to the season of the year, are best suited for the plants; but if there be no greater objection to them than that of the exposure of the pots to the drying and heating effects of the sun, that difficulty is easily surmounted by having a quarter-inch board nailed on the side of the shelves sufficiently high to protect them. I have found this answer the same purpose as the front supporting plate, protecting the pots from the sun, and keeping them cool and moist, at the same time preventing the drying influences of the increased current of air necessary to keep down the temperature of the house.

I do not think there was any, if much, difference between the plants on the shelves in the centre of the house and those on the shelves close to where fresh air was admitted, the produce being equally good on all, though those on the shelves near the openings did not, perhaps, afford the same quantity and quality of fruit that they would have done had the necessity for giving air been less. That such was the case was likely to be found that two shelves placed under the

apex of a span-roofed house did not yield one-half the fruit produced on two shelves placed along the sides by the front supporting plates, where the fresh air entered the house, there being no ventilation at the top, which is the case with many orchard-houses, and is, I think, a mistake; for what is the good of ventilation if foul air be not displaced by fresh? I think the Strawberry-house at Enville, figured at page 354 of Vol. VII., open to this objection; though the roof is only a half-span, that part at top formed by the back lights must constantly be surcharged with the impurities of the house carried there by the ascending heat, for which there is no escape. The span-roofed house above alluded to having been altered so that fresh air was admitted or foul air let out, after that the plants were better there than on the side shelves.

If a house could be exclusively devoted to the forcing of Strawberries it might be desirable to have a stage as in the house at Enville, the room being employed for forwarding plants for flowering in winter; but it is open to the objections raised by Mr. Ingram, and unless a house of the kind were unoccupied or could be spared it would not be advisable to erect such for forcing Strawberries, for whilst building or constructing a Strawberry-house it would be as well to have one calculated to meet all the demands of the plants. The requirements in forcing Strawberries are close proximity to the glass, without being so near as to scorch them, a little air at all times, and a cool moist situation. These conditions are secured in all their integrity in none of the usual structures found in gardens, and cannot be unless a house is constructed on purpose, which is what I believe Mr. Ingram has done, and found to answer perfectly, adding another benefit from a family that has done much for horticulture.—G. ABBEY.

DEVONIENSIS ROSE VERSUS CLIMBING DEVONIENSIS.

PERMIT me to say a few more words on our old favourite Rose. Mr. Curtis still thinks this is a distinct variety from the old one; he says during his rambles he met with it in several places. Can Mr. Curtis bring proof that the plants he saw were planted previous to 1858? if so, from whom were they obtained? I believe all the climbing ones have been obtained from plants sent out by me in 1858. I am only surprised that Mr. Curtis should want the public to believe that his is distinct. If his variety that he says he so improved upon is distinct, why should he have written to me some few months since requesting to be supplied with 1000 plants? If Mr. Curtis in his rambles will kindly pay me a visit I will show him the parent plant, which is scarcely 18 inches high, but the offspring are growing as wild as any of the Ayrshire Roses in the heart of this city.—SAMUEL PAVITT, *Rose Cottage, Bathwick, Bath.*

KEEPING FOR A YEAR RANUNCULUS AND ANEMONE TUBERS UNPLANTED.

I WAS spending the winter at Naples six or seven years ago, when I became acquainted with the gardener at the Royal Palace of Capo-di-Monte. At the time of which I write there were some Ranunculuses coming into bloom, and the size of the flowers surprised me, they being very much larger than any I had ever seen at home. I was informed by the gardener, that to obtain large flowers the roots should be kept dry for a whole year before being planted, that, in fact, they should be planted only in alternate years. On returning home I reported this to my own gardener, who, with evident pity for my ignorance, told me that if kept dry for so long they would not start at all when planted.

Two years later I was at Rome, and in making my way from the church of S. Pietro in Montorio, to the Colosseum, I came across a nursery garden, in which there was a fine collection of my old Italian acquaintances, the giant Ranunculus. On a second visit, I found the owner, and immediately questioned him about this system of resting the roots. The nurseryman told me that he was a native of Hamburg, and had been brought to Rome to take charge of some noble's villa. In his own country, Ranunculus-growing

was a speciality he was well acquainted with, and when he first came to Rome he could not believe in the success of a system under which the roots were so long kept dry. He had been obliged, however, to acknowledge himself wrong, and he assured me as a fact, that even in the dry climate of Italy the roots were not damaged by the year's rest, and that when so rested they produced larger flowers than when planted every year. I have an old book translated from the Dutch, and published in London in 1711, entitled "The Dutch Gardener," by Henry Van Oosten. In it I find it recommended to keep Anemone plants a year without planting when you wish to obtain seed; but it is not said that this makes any difference in the size of the flower. Among your readers and correspondents there may, perhaps, be some who have tried the system of giving a long rest to *Ranunculus* and *Anemone* tubers. If such there be, a communication of their success in growing their plants, would, I doubt not, to many of your readers, be as interesting as it would be to—MONTICOLA.

SPRING LONGINGS.

SHALL I be trespassing? May I be permitted to shift my attentions to the gardening side of "Our Journal?" Well, our good friend, "WILTSHIRE RECTOR," sets me the example. Why, should I not? Living in and loving intensely the country, of course, I care a little for gardening too; and all, I expect, who live in the country long for spring! When Nature is clothed in her gay attire we rejoice, and though some of us may revel in snow, yet our delightful season is certainly not winter. I presume, then, that almost every lover of the country sympathises with your valued correspondent on that score. I will plead guilty to ardent longing, almost like that of the Swiss, when banished from his beloved country. Yet we are not all alike. A few days back I met an old keeper, who is very fond of and a capital hand at gardening. I began sympathisingly shrugging my shoulders at the frost, and intimating my extreme contempt for the much vaunted old-fashioned winter. His quick reply was, "It's beautiful weather, when it's gone we shall have everything in its right place." Well, "WILTSHIRE RECTOR" and his brother and sister spring-longers, may take what comfort they can from the old keeper's words; but I cannot help feeling, that getting to the right place is awful' could wark.

Ugh! it was bitter again this morning, warm in the sunshine; but just put your nose beyond that cottage, Oh! isn't it delightfully cutting, quite refreshing, that sharp north-easter, which is keeping us all in "the right place." [This was written some days ago.] I thought of my *Hepaticas*, *Primroses*, and early chickens, and felt for them all, especially the latter. Talking of *Primroses*, I have a lot of roots that never see the sun till late in the afternoon. They have been picked by my in-door chickens out of the hedges; they are the most kindly roots, they generally commence to throw up blooms late in the autumn, and they keep on in straggling flower through the winter—now apparently the very life crushed out of them by the frost; now inches deep in snow; and then, again, erect, most pleasant to the eye, and, even in spite of the north-easters, harbingers whispering of spring. Yet winter has its charms. I do not know that a snowstorm has, at least not to myself; there is no guarding against the flakes, driven under your throat now, the hand lifted to move the same and there are two or three flakes down your neck. It is just the same in our outhouses, any cracks and in drives the snow; but, after it is down and whilst it maintains its pristine whiteness, it has beauties peculiar to itself, and our friend, "WILTSHIRE RECTOR," has depicted his beautiful neighbourhood in its wintry dress; it differed somewhat from mine, hence my letter. "WILTSHIRE RECTOR" tells us of poets who described in vivid language scenes they never saw. That may be easy and comes natural to them. My difficulty is far greater—viz., to describe what I did see, that I will endeavour to do, but I shall do scant justice to the scene.

On "WILTSHIRE RECTOR's" penny-reading night, I suppose, it thawed here; the increased temperature melted all the snow that remained on the branches, soon it rained, freezing as it fell. Before morning the wind rose to a gale,

and those who lived near woods or plantations tell me the cracking and snapping of large branches was terrible, and certainly the havoc was somewhat unusual. Nearly the first object that caught my eye was the top of a Fir tree from the neighbouring plantation, 8 or 10 feet snapped clean off, and sent flying some 20 yards. Several brothers shared the same fate; but Elm, Ash, and Beech, all alike suffered; huge limbs that made respectable trees were laid low, others hanging perilously aloft. All our trees were covered thickly with clear ice nearly half an inch thick. This not only added to the weight, but appeared to render the branches more brittle; they would not bend, and so they broke when the wind rose. The swaying of the branches was attended by a continual crackling sound, broken ever and anon by the crashing of some huge limb.

Of all the trees that I have noticed the Beech and Birch have suffered most severely. It is quite the exception that proves the rule, to see one of the latter that has escaped scatheless. I have marked fully a hundred Weeping Birch trees, many are irretrievably ruined. I have seen one of fully 6 inches in diameter of trunk, with the head twisted off as by some giant's hand, others, where the trunk divided into two branches, split down the stem to the ground. What wonder then, if these larger specimens felt the force of the ice and gale, that my kind neighbour's pet, planted some three years ago on her lawn, and which she assured me the nurseryman had warranted to weep when it grew, should have decided on weeping thoroughly, leaving only the stem. Its neighbour, the Cedar, the most perfectly furnished specimen I ever saw, in sympathy with its companion lost several of its branches; whilst close by two sister Larches have scarcely a respectable branch remaining.

I have said that all the branches had a thick coating of ice. This was a glorious sight; every rustle altering the angle at which they caught the light, the ice appeared like myriads of diamonds covering every branch, and when the sun shone how these glories were increased. They reached the acme of splendour when I saw them with the red frosty sun setting behind them, the branches then assumed a roseate hue, and appeared like rubies and opals with the whole sisterhood of precious stones.

Not only on the grand forest trees were these wonderful marks of the Creator's power visible, every tiny branch, every insignificant leaflet, every withered stem of herbage shared in the sparkling adornments, and added their share of lustre to the scene. From my garden-wall I picked the dried stem and seed-vessels of a Wallflower, it was a picture in itself. On close inspection the dried fibres were plainly seen through the coating of clear ice. I pass over the magnificent forms which the snow assumes when driven by the wind through the gaps of the hedgerows, beautiful as they are they may be seen most winters, but not the fairy scenes I have endeavoured to describe. It was well worth seeing, yet my spring longings are so intense, that I care not to see it again, at least, not for longer than an hour, then let the genial southerner dispel this "fabric of a vision." Even will I consent to be pitilessly pelted by the dislodged fragments of ice—peltings which to me have this satisfaction, that the frost is yielding.

"WILTSHIRE RECTOR" and others, with myself, must take courage. I saw this day, our "early" village Horse Chestnut. I hailed with delight the outer gummy coverings of the buds dropping, and the tender pale green peeping out, and rejoiced that "there was a good time coming," although that unkind easterly may succeed in making us "wait a little longer."—Y. B. A. Z.

EFFECT OF GRAFTING THE ELM ON THE OAK.—In your Number of March 21st you have a paper extracted from *The Naturalist* as to the curious effect of grafting the Elm on the Oak, the twigs producing leaves of both these trees intermixed, and the Editors of that publication ask if anything of the same kind has come under the notice of any other person. So long ago as 1818 Mr. Pontey, of Kirkheaton, near Huddersfield, laid out some grounds for me, and planted a great number of variegated shrubs, and amongst other things two trees having Oak leaves and Hornbeam (or Elm) on nearly every twig on the tree. When I left the house ("Craw Trees," Gomersall, near Leeds), ten

years ago they were still flourishing, and I doubt not are so now; and if you wish it, when the season returns, I will send you a few twigs.—E. S., York.

VISITS TO FOREIGN MARKETS.

THE scene presented to the stranger by the market at Genoa, although not so picturesque and attractive as that of Gibraltar, was a fair representative type of the industrial character of the Genoese, for the quality of most of the country productions was first-rate. I say "country" to mark the distinction between the produce of the land and of the sea; for here I may make the remark that I was surprised, in all the Italian ports which I visited, at the paucity and inferiority of the fish. It would be supposed that the splendid bays and coasts of Italy would furnish very superior supplies of fish; but, although I searched the various markets, I could only find small supplies, and those of most inferior quality, of red and grey mullet, sardines, anchovies, ray, bream, and a flat-fish resembling soles, ink-fish or squabs. The best I saw were some immense crawfish, as large as lobsters, at Genoa; but even their nationality was dubious. Oysters, at Naples, were as fine as our smallest natives; but elsewhere they were hardly larger than the cockleshells, of which crustacea there are evident signs at Pompei that the supply of that mollusc was good, and of a large size. The greatest novelty I saw in fish were some very small fish resembling whitebait, but about half the length, and very much smaller in girth. They were exposed for sale in tubs as caught, and also rolled in flour, ready for cooking. Their flavour was delicate, and I should say even more so than the whitebait. They are called "blanquettes;" but I am not sufficiently learned in pisciculture to say whether they are a distinct breed, or merely the young fry of the sardine, or other similar small fish.

Amongst the vegetables, the most prominent were the Walcheren Broccoli, which was immense; the Purple, on the other hand, was poor. Parsnips, early Turnips, Salsafy, Lettuce, well-blanchend Endive, Water Cress, and Leeks, were all good, and well grown. The Radishes were immense, and exceedingly tender and juicy. There were a few Yams, but not of good quality, new Potatoes fair, and Peas very inferior; the blanched tops of the Globe Artichokes, and also Fennel, were on sale. Celery was abundant, but evidently only for culinary purposes, not for salad; for it had all been grown without having been earthed-up, or any attempt made at blanching.

Amongst the fruits Oranges, of course, were the principal in season, and, on the whole, the quality disappointed me; but I was astonished at the very superior quality of the Apples; they were both fine and very good. There were several kinds, but the best resembled the well-known American Newtown Pippin. It had all the crispness of the American fruit, but also more juice, and a slight pear flavour. I could not obtain the local name of this Apple, but venture to recommend it to the attention of some of your pomological friends. I also found the Pine cones on sale, roasted like Chestnuts, at the corners of the streets, and pronounced the kernels or pips very good when eaten hot. Chestnuts were fine and abundant, and were also offered for culinary purposes, shelled, dried, and in barrels; Tomatoes, dried, and hung on strings; kept Grapes were poor in quality, Pears also very indifferent, and, we thought, from a foreign source.

The poultry were exceedingly good; it would not be possible to find better-fed and better-flavoured turkeys in England than those partaken of at Genoa. Other poultry were also good, but the ducks and geese were few in number, and small.

On going into the country I was much gratified at seeing the careful and industrious manner in which the Genoese were cultivating every available bit of land. During my ride I did not see one spot worth cultivating idle, even up to the tops of the hills, and the peasantry appeared thoroughly to understand the benefits of deep trenching, and to make fair progress in their work with a digging tool which would bother an English gardener to use. They also appear to use a good deal of the fine shingle, from the seashore, for

At various parts of the city were vendors of bouquets, and I was told that Genoa has a continental reputation for their beauty and the skill displayed in their construction. This was borne out by what I saw; for, on passing up the Strada Nuovo, a large bouquet was being packed in a most appropriate case for a long journey. This bouquet measured exactly 30 inches in diameter, and was composed of a centre of seven white Camellias bedded in sweet Violets; around this were eight rings of pink and pink-and-white (bicolor) Camellias, bedded in dark Pansies; these were surrounded with a belt composed of Ageratum, the flowers of a small Narcissus, sweet Violets, and single Camellias, with a fringe round all of Mignonette, the bed being formed of Erica mediterranea. The large circular box in which this was packed had a hole in it, through which the handle of this monster bouquet projected, and by which it was so secured that nothing could touch the flowers inside. I had the opportunity of observing that this bouquet was not an exceptional one; for in several of the houses which I visited there were others equally large and beautifully constructed.

Since writing the above I have visited Leghorn, Pisa, Florence, and Naples, and find such a sameness in the markets that the foregoing description of the things at market will apply to all, the only extra at Naples being the Lupin, which appears to be largely cultivated both for use as fodder and for the seeds. What I thought most worthy of note was the great scarcity of birds of all kinds, both small and great (they really appear to be extinct; even in the towns it is not possible to find a sparrow in any of the streets), the extraordinary fertility of the soil, and lastly, the heavy crops which were growing all around the Vines, close up to the canes, evidently showing that the Italians do not agree with us in the idea that the ground about the roots of Vines ought not to be cropped.—CÆLERS.

WORK FOR THE WEEK.

KITCHEN GARDEN.

NEVER wait for weeds; take care not to tread on any ground after it is surface-stirred. Beans, make another sowing to succeed those sown in the end of last month. Broccoli, if a sowing has not yet been made of the various winter and spring varieties it should be done without delay. Brussels Sprouts, make a good sowing for winter use. Cabbages, a sowing of any approved sort should now be made to produce plants for winter and spring use. As autumn-sown plants are very scarce, the spring sowing should be forwarded as much as possible by pricking out the plants on a warm border, and watering them when requisite. Cardoons, the seed may now be sown in trenches where the plants are to remain. The trenches should be about 4 feet apart, and a few seeds dropped in at intervals of 18 or 20 inches. Cauliflowers, prick-out the young seedlings on a warm border, earth-up those that have stood the winter beneath hand-glasses. Cucumbers, keep the shoots regulated, as on this their fruitfulness in a great measure depends; seed should be now sown to produce plants for ridges. Mushrooms, in making beds to produce through the summer a portion of loam should be mixed with the dung, this will give greater solidity to the bed, which will in consequence produce more fleshy Mushrooms. Marigolds should now be sown where they are required for kitchen purposes. Nasturtiums, sow some seed at the foot of a fence where the plants can do no injury by their rapid growth. Potatoes, water and earth-up those in frames. If the main crops are not yet in lose no time in planting them. Spinach, sow a small quantity of Round-leaved, thin-out the early-sown to 6 inches apart. Savoy, another sowing may be made for a late crop. Turnips, make another sowing to succeed those sown in the middle of last month. The present fine weather is favourable for putting in crops where the soil is of a stiff nature, and it will generally be found that by waiting till the ground is in good tilth the crops are equally early and far superior to those sown last month when the soil was cold and wet. As the heads of Broccoli are cut remove the stumps, as they only harbour slugs and vermin.

FRUIT GARDEN.

Growth is slow this spring, but the disbudding of Peaches and Nectarines will soon require attention. First remove

a portion of the superfluous shoots, and in a week or ten days go over them and regulate them finally. The superfluous shoots of Apricots must also be removed, and the remainder carefully examined for the green caterpillar, which not only injures them but also eats holes in the young fruit, thereby causing it to gum, grow deformed, and fall off before it is stoned.

FLOWER GARDEN.

In vacant places patches of showy hardy annuals which usually exist in herbaceous-beds and in the borders of shrubbery, should now be sown. Double Poppies of various colours, Lupins, Sunflowers, African and French Marigolds, Erysimums, Clarkias, Gilias, Collinsias, Silene, and Nemophila, are excellent for that purpose. A sufficient quantity of cuttings and seedlings of half-hardy climbers should now be potted for planting out in May. With such plants as Cobæas, Maurandias, Lophospermums, Calampelis, Tropæolum canariense, &c., many bare places on walls and trellises may be covered and made ornamental which would otherwise be unsightly. Look well to recently transplanted trees and shrubs. A sprinkling overhead with the engine on the evenings of fine days will, when the weather shall have become a little warmer, be of more service to large evergreens than overwatering them at the root. See that all recently-planted trees, whether large or small, are well secured against the wind. Now, with April showers and bright and occasionally warm sunshine, we must be in readiness for mowing. Have the turf swept, well rolled, and made thoroughly firm without loss of time, and remember, that if the first mowing is deferred until the grass grow long, it will require much time and labour to bring the turf into a proper state. Also, let the edges of the walks be cut and otherwise put in proper order.

GREENHOUSE AND CONSERVATORY.

What with Azaleas, Camellias, bulbs, and a sprinkling of New Holland plants, the conservatory will now be gay with flowers. Let every plant be placed in the most suitable position, and aim at maintaining a pleasing uniformity of arrangement and displaying the colours to the greatest advantage, bearing in mind that no amount of floral display will compensate for bad arrangement. Let climbers, both in pots and borders, have due attention in regard to training, and retain no more shoots than the allotted space will afford room for. Pay particular attention to the Lilliums now in pots, by giving them a liberal supply of water and by neatly staking them. Let Fuchsias, which are so useful for summer and autumn flowering in the conservatory, be repotted as required in rich compost, watering occasionally with liquid manure. The leading shoots of Epacrises, Chorozemas, Correas, Heaths, together with as many choice plants as produce the best effect in a bushy state, should be frequently pinched or stopped in order to form good specimens; also, those of Calceolarias, Verbenas, and other young stock intended either for decorating the flower-beds or for succession in pots. Pick off decaying flowers and leaves directly they make their appearance, and endeavour to replace the plants in the conservatory with others as soon as they begin to become shabby. Sprinkle the surface of the beds frequently so as to assist in keeping the atmosphere moist, and also see that the under soil is kept in a uniformly moist state. Watch for insects and attack them as soon as perceived, which is the only way of preventing their doing mischief.

STOVE.

Proceed with the repotting of such plants as require it, and give all necessary attention to those in active growth. If any plants require propagation, seize an early opportunity. Keep a moist atmosphere with a sweet and regular circulation of air, using abundance of water about floors, and syringing frequently air plants or others suspended. Shut up with a solar heat, if possible, of 80° towards three or four o'clock. As spring-flowering plants and for cutting we know of none more useful than Begonias. Now will be a good time for commencing with a stock for next season's display. As they go out of bloom allow them a short rest in rather a dry house, when they may be partially disrooted and repotted, pruning-in any straggling shoots. Keep them close and syringe frequently, when they will soon commence growing. Abundance of light and a tolerable share of pot-room are necessary to insure fine plants.

PITS AND FRAMES.

Attend carefully to the stock of bedding plants, and get rooted cuttings potted-off as soon as they are in a fit state, and encourage them with gentle bottom heat. Calceolarias, if well established, may be planted out in a turf-pit in poor sandy soil, where they can be protected from frost or cold winds.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE anticipated genial change in the weather has made us busy. Forked over the ground among young Cabbage plants and Broccoli, and gave the latter some drainings from the farmyard, making sure that it was not too strong. Turned out Peas, Beans, &c., in turves from between rows of Potatoes, under protection, approaching maturity. Forked the ground and earthed-up Potatoes where wanted. Those grown in pots have turned out useful. Put a few branches among the Peas and Broad Beans for a few days, and then turned them out, dividing a turf some 1 foot in length, into three pieces, and in the case of Peas, staked as the work proceeded, and put a few laurel twigs near the bottom of the rows, to act as temporary protection. Early Peas are such an object that a little extra trouble must not be grumbled at. The twigs and the staking keep the birds, too, at a distance. A neighbouring friend has told us that his Peas have not moved a bit, except downwards, for the last month, the sparrows having a feast on the young shoots every morning. A string is of little use after staking, but the birds seem to have a dislike to the green twigs of the laurel. The staking as the planting goes on leaves the ground sweet, open, and porous. How different when the ground is all trampled and trodden. Last year our early Peas were wonderful for strength and produce. Against our usual rule, we have put these transplanted ones in the same place this year, as we have only a very small piece of south border. Potted-off and sowed more Dwarf Kidney Beans. Now is a good time to sow about half a dozen Beans in a five-inch pot, and place them in moderate heat, and when the plants are stopped and stubby, turn them out under protection in May. Thinned out Cauliflowers from hand-lights, leaving four and five to each. The thinnings were planted in rich ground, the plants left under the hand-lights being well watered and dressed with rich compost, and the glasses raised by placing earth on the part where they stand, leaving a basin in the middle. As they become stronger they will be bent outside of the glass to give them room, and the glass itself will be elevated on bricks, so as to keep the stems warm. Those in pots have yielded some nice little heads. Cucumbers in frames have had some banking-up given to the frames. Sowed more Onions and a good piece of Carrots. Hoed among Onions and other winter crops, proceeded with planting some more Potatoes, and prepared for planting Jerusalem Artichokes, Sea-kale, and Asparagus, sowing the two last, and a few Winter Greens, Turnips, and Radishes, the last two under protection and in the open air, the latter to be defended with branches. Carrots and Turnips that have stood the winter, however young, are now apt to be hard and stringy.

FRUIT GARDEN.

Very much the same as last week. Proceeded with outdoor pruning, even if we could not follow up with nailing and tying, as all such work, and out-door work in general, is behind this season, owing to the weather having been so unsuitable. A few fine days, however, will permit of many things being done.

ORNAMENTAL GARDEN.

Very much the same as last week. Pruned Roses and other shrubs as we could get at them. Rolled lawn after sweeping. The winds have brought lots of tree leaves from a distance which gives a littery appearance, and all dead twigs have been pretty well shaken out of the trees. Looked after fresh-planted trees and shrubs to see if they were firm, and the stakes all right. If we have much bright sun syringing, or a little hay scattered, or fresh-planted evergreens, will lessen the evaporation. We once moved a number of tall-stemmed Oaks from a thick plantation to plant in a park, and part we left to take their chance, and round

the boles and the principal branches of the rest we wrapped strawbands, and gave them several dashes overhead with the garden engine during a hot spring. Those left alone had a hard time of it, the cold and then the dry atmosphere were too much for them. The ropes not only lessened evaporation, but gave the plants something of the protection they had received in the thick plantation. For want of such little attention at first, we have known Oaks carefully lifted from a thick plantation, and carefully planted in bleak exposed places, that were hardly perceptibly larger a dozen of years after they were planted. If the ground had been prepared for them, and small Oaks, say 3 feet in height, planted with some Larches or other things as nurses, the young plants, if the nurses had been gradually removed, would in less time have been a-head of the transplanted ones. The want of success in transplanting is very often owing to the want of warmth.

Roses should be gently smoked if the least fly appears on those in-doors. If done before the bud swells much it will not be wanted afterwards. Two or three gentle smokings are better than one strong one, as too much will be apt to injure the tender leaves. If the foliage or buds are hurt by beetles they must be sought for at night. Pinks and Carnations showing bloom should also be smoked before the buds open. Those to be planted out of doors and now in pits and frames should also be well cleaned before turning them out. If only a few are touched, a finger and thumb run along the shoots will often do all that is necessary, if the shoots are washed afterwards with clean water. The secret of preventing fly and other insects consists in keeping the plants cool instead of hot, and even then to do well they must be pretty hot in sunshine, keeping them in a comparatively low temperature at night. A great object would be gained could people be convinced that hosts of insects will attack plants when enervated by heat that will never touch them when they are kept comparatively cool. A difference of from 5° to 10° of night temperature will frequently make all the difference between clean and healthy, and sickly and insect-covered plants of *Cinerarias*, *Calceolarias*, *Pelargoniums*, &c. If it should be necessary to smoke the latter and syringe them afterwards, the plants should be shaded until the foliage is dry.

Climbers in the conservatory, greenhouse, and stove should now be regulated and pruned. The best plan generally is to fasten the main stems and allow the young flowering shoots to dangle pretty well at pleasure. No system of training will be so effectual and graceful.

Cockscombs to be fine must have a nice sweet bottom heat until the comb is nearly its full size. Early *Balsams* should have plenty of air and a lower temperature than Cockscombs. Now is a good time to sow *Balsams*, either for planting in the flower garden in June or for cultivating in pots. After the end of May a cold pit or frame is the best place for them; and in their young state the plants will be better if never receiving more than 55° from artificial heat, with a rise of 20° from sun-heat after a little air has been given early.

Stove plants for winter-flowering, as *Justicias*, *Eranthemums*, *Goldfussias*, *Euphorbias*, *Poinsettias*, *Begonias*, &c., may now be repotted; and cuttings of all these inserted in a hotbed now will make nice flowering plants by the autumn. The *Begonia fuchsioides* may be struck now; and quickly grown in summer, and a little stinted of water in the autumn, it will bloom nicely all the winter. Old, tall, or long plants make also nice rafter plants if they are now well cut in to the older wood—that is, the winter-flowering shoots cut back to a couple of buds or so, and then fresh earth given to the roots after the plants are breaking afresh.

Sowed lots of tender annuals, as *Cannas* and *Ricinus*, and potted a lot of *Cannas* that were kept cool under a stage all the winter. In our cold place *Cannas* do so little as respects robust vigour out of doors, even when encouraged with some hot dung below them, that we are pretty well resolved to use their fine foliage chiefly for giving a marked feature in the conservatory. One thing against them out of doors with us last season was the great dearth of water. The year before they did middling, but not so well as they do farther south, and even much farther north in sheltered warm places. The finest dwarf *Balsams* we ever saw out of doors were in the north of Scotland. Considering the

vigour and robustness they attain in most parts of England when planted out, it is singular that rows of such fine plants are not more frequently met with. Except in cool, open, airy houses it is scarcely possible to obtain such fine plants in pots as may be grown in rich compost out of doors, when planted out about the end of May. We have seen many a sickly shrivelled *Balsam* standing on the outside sill of a parlour window that would have shown a lively sense of gratitude for favours received if turned out into the adjoining border.

Gave more room, and thinned the foliage a little of the most forward *Pelargoniums*, which are now standing in the late vinery, where they obtain plenty of light and air, and no artificial heat except in very cold nights. We have at present no time to train them much. A second lot should have any very strong shoots stopped, so as to equalise the growth. Potted a lot of plants struck last autumn. At Latimers and other places we then saw fine pots of *Ipomoeas*, *Convolvulus*, &c., in the conservatory. These should now be sown in pots, and thinned out to four plants or so. They do not do so well transplanted. Even the *Canary Nasturtium* does best either sown where it is to grow, or sown in pots and then planted out. After it is from 3 to 6 inches in height it does not transplant so well.

Sowed a good lot of half-hardy annuals, as *Marigolds*, *Asters*, &c., in a bed, to be protected by a cloth, branches, &c. We had a lot of litter that had been used for covering, which we hope we shall not need now. This formed the bottom and sides of our bed, and some 12 inches of very warm tree leaves the upper portion, with 2 inches of rotten leaves and 2½ inches of fine soil to sow in. Such beds are more hardy than boxes or pots, and require much less attention afterwards.

Commenced in earnest to thin our glass houses of bedding plants, by turning out lots of *Scarlet Geraniums*, &c., under protection, just placing a little rough warm leaf mould over the roots in the trench. Thus treated they generally lift well. Turned out from a hotbed, a lot of variegated ones that had been planted on pieces of turf, the roots already hanging round the sides of the turf. This turning out will check them a little, and prevent the roots running from home, and they will scarcely want above one or two waterings until they are transferred to the beds. A lot of young plants of *Golden Chain* are doing well under this mode of treatment. Now as to protecting material. We shall use almost every conceivable thing—*frigi domo*, calico, straw hurdles, wattled hurdles, matting, &c. But for the expense we prefer calico. For an earth-pit 5 feet wide, procure calico about that width, or an inch or so more; have the calico in—say 30-foot lengths, and fastened to a pole at each end, with some seven strings fastened back and front, with which to keep the cloth tight, by looping over little sticks when it is rolled over the plants, after placing some stakes across the bed to keep the cloth from the plants. In many cases we have turned out plants under such a cover in the beginning of April, and they scarcely wanted any more care, except a little extra protection in a frosty night, until they were exposed some days before final planting out. *Frigi domo* does very well, but it does not let the nice subdued light reach the plants in the same way.—R. F.

TRADE CATALOGUES RECEIVED.

E. G. Cooke, 8, Stewardston Road, West, Approach Road, Victoria Park, London.—*Catalogue of New and Choice Geraniums, Fuchsias, Dahlias, Verbenas, Chrysanthemums, and other Bedding Plants.*

T. Townsend, St. Mary's Nursery, Hornsey.—*Catalogue of Greenhouse and Hardy Plants, Shrubs, Trees, &c.*

COVENT GARDEN MARKET.—APRIL 8.

Notwithstanding the mildness of the weather supplies have scarcely improved, and everything remains much the same as last week.

	s.	d.	a.	d.		s.	d.	a.	d.
Apples.....	½	sieve	2	0	to 4	0			
Apricots.....	dox.	0	0	0					
Chestnuts.....	bush.	14	0	20	0				
Elberts.....	100 lbs.	40	0	0					
Cobs.....	do.	50	0	60	0				
Grapes.....	lb.	15	0	30	0				
Lemons.....	100	5	0	10	0				
Oranges.....	100	0	6	to 14	0				
Pears (kitchen).....	bush.	8	0	12	0				
dessert.....	dox.	3	0	10	0				
Pine Apples.....	lb.	10	0	14	0				
Plums.....	½ sieve	0	0	0	0				
Strawberries.....	os.	1	6	8	0				
Walnuts.....	bush.	14	0	20	0				

VEGETABLES.

	s.	d.	a.	d.		s.	d.	a.	d.
Artichokes.....each	0	4	0	6	Leeks.....bunch	0	3	0	6
Asparagus.....bundle	8	0	14	0	Lettuce.....doz.	2	0	4	0
Beans Broad.....sieve	0	0	0	0	Mushrooms.....pottle	1	6	2	6
Kidney.....100	2	0	3	0	Must. & Cress, punnet	0	2	0	0
Beet, Red.....doz.	2	0	3	0	Onions.....bushel	5	0	7	0
Broccoli.....bundle	0	0	0	0	pickling.....quart	0	6	0	8
Brussels Sprouts.....sieve	3	0	4	0	Paralei.....sieve	3	6	5	0
Cabbage.....doz.	1	6	2	0	Parsnips.....doz.	0	9	1	0
Capoteams.....100	0	0	0	0	Peas.....quart	10	0	15	0
Carrots.....bunch	0	7	0	10	Potatoes.....bushel	2	6	4	0
Cauliflower.....doz.	2	0	6	0	Radishes doz. bunches	0	9	2	0
Celery.....bundle	2	0	3	0	Rhubarb.....doz.	0	8	1	6
Cucumbers.....each	1	0	4	0	Savoy.....doz.	3	0	4	0
Endive.....score	2	6	3	0	Sea-kale.....bushel	1	6	3	0
Fennel.....bunch	0	3	0	0	Spinach.....sieve	4	0	6	0
Garlic and Shallots, lb.	0	8	0	0	Tomatoes.....sieve	0	0	0	0
Herbs.....bunch	0	3	0	0	Turnips.....bunch	0	5	0	0
Horseradish.....bundle	2	6	4	0	Vegetable Marrows doz.	0	0	0	0

TO CORRESPONDENTS.

*. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

CUCUMBER-GROWING (Amateur Gardener).—Your best plan will be to obtain sufficient hot dung to form a bed 1 foot wider than the frame, and about a yard in height. Shake the dung thoroughly out and mix it, and beat down with a fork; it will also be all the better if turned over once or twice to allow the rank steam to escape. It will then afford a milder and more lasting heat, besides not generating so rank a steam as when made up of fresh dung. The bed having been made, place the frame upon it, and put on the lights. In about a week the heat will have risen in the bed; then, taking off the lights, level the surface of the bed, and if the heat is not too violent (this you may ascertain by thrusting a trial stick into the bed, and if you can hold the end tightly in the hand without a sensation of burning the heat is not too great), put under the centre of each light half a barrowful of loam: soil—that from rotted turves a year old is the best—in the form of a cone with a flattened top. An inch or so of soil placed over the surface will, to a great extent, keep down the rank steam. This done put on the lights, and in a few days you may plant in the hills, putting one plant under the centre of each light, or two under each if the lights are 6 or 7 feet long, and of corresponding width. Water after planting, and regularly afterwards according to the condition of the soil. Always use water which has been exposed to the air, and of the same temperature as the air of the frame. Admit air on all favourable opportunities, opening early and closing early. The temperature by night may be from 60° to 65°, giving air at 75°, and closing at 80°. When the roots come through the sides of the hills place more soil over them, and about three weeks after planting cover the bed with soil sufficient to make a thickness of 9 inches all over the surface. Stop the shoots by pinching-out their points one joint above the fruit, or if none show stop them after they have grown a foot in length, presuming them to have been previously stopped at the second leaf. Do not allow the shoots to become too crowded, but thin them out, always taking out the weak and those that have borne fruit. Water through a rose over the surface on bright days at 4 p.m. This will be required about twice a week, or in very bright weather every other day, then shut up the frame.

BOOKS (E. M.).—The "Cottage Gardeners' Dictionary" may be had at our office for 5s., or free by post for 5s. 8d. The other work, with supplement, costs £1 11s. 6d. Apply to the curator of the gardens. (F. B.). Henslow's "Rudiments of Botany" is a very good work.

CHORONEMA CORDATA OVER-VIGOROUS (W. A. O.).—Your plant is excessively vigorous, a condition which the leaf mould and planting in a border would have a tendency to induce. So long as the plant continues to grow so vigorously it will not bloom, but if you confine the roots to a part of the border, and keep the soil rather dry in winter, it will bloom all the finer in consequence of being vigorous. It should have a light airy situation. It will not bloom in a shady border.

FERNS IN CASE MOULDING (R. and B.).—The cause of the fronds moulding is the atmosphere being too confined. They should have a little air, and the moisture should be wiped off the glass once a-day in the morning, or air may be given to dry it up. The case should be opened a little—half an inch or so at top—so as to allow of a change of atmosphere. In other respects we think your arrangements and management good. Of the Ferns in your list, the Gymnogrammas, Cheilanthes, and Nothochloenas are not suitable. They require just the reverse of a close confined atmosphere, though they flourish in one that is moist. The others ought to do well.

FRANKON VINEY-BORDER—STRIKING MRS. POLLOCK GERANIUM (Mrs. W.).—We would plant the Vines inside, but, as you correctly show, make sure that your inside border is rather the highest. The frame or pit will be an advantage every way, provided you keep plants in it that require little water in winter, and are able, if not to remove the glass, to remove the plants in summer, in order that the sun may shine upon the soil. These two matters kept in view, your pit or frame will answer admirably. There is no secret about striking Mrs. Pollock Geranium; if you want a good plant quickly from a cutting you must use a good-sized cutting. Clever gardeners may cut up a young shoot into as many pieces as there are leaves and make a plant of each, just as is frequently done with Verbenas, making two plants from every joint; but were you to try the plan and could not give the requisite attention, most likely you would lose them all. Striking such things as Mrs. Pollock from leaves without a piece of the stem with the leaf, we consider sending amateurs on a wrong scent.

BIRD'S-NEST FERN FRONDS DROOPING—PRUNING IPOMOEA LEARII (Swep).—The probable cause of the fronds not developing is the close stagnant air of your house, and allowing water to stand or drip on them. It is impatient of water on the fronds, and will not do in an excessively moist house. Cease syringing and repot the plant, providing good drainage and using the compost rough. Maintain a moist atmosphere by sprinkling the floors, &c. We think the syringing the leaves twice a-day is the cause. Ipomoea Learii may be pruned close in in the autumn, which is the usual practice, it being necessary to prune then or before growth recommences, in order to have strong bines, and consequently large flowers.

CUCUMBER LEAVES BLOTCHED (A Constant Reader).—The Cucumber leaves are spotted and blotched from steam or heated vapour. Most likely there had been a large amount of vapour in the house, which had become condensed on the leaves, and the sun had caught them next day before air was given to let off the hot vapour and dry the leaves. The rest of the young foliage will most likely come all right if the necessary precautions be attended to.

PLANTING HONEYSUCKLES (M. A.).—The best flowering and most hardy of the Honeysuckles is the Woodbine (Caprifolium perfolium). C. Brownii and Youngii, varieties of the Scarlet Trumpet Honeysuckle, are fine and free blooming; and so are C. odoratissimum, Shepherdii, and flexuosum. They are best planted in autumn or early spring, but they may be removed now if taken up with a good ball and well watered at planting, and during dry weather until established.

PROPAGATING DOUBLED PRIMULAS (Idem).—These are propagated by taking off the offsets with a heel, or dividing the plants with a sharp knife, trimming off the lowest leaves, and inserting in a compost of sandy peat two-thirds, and turfy loam and silver sand in equal parts one-third. Let the base of the cutting or root-division rest on and be surrounded with silver sand. They are best inserted singly in small pots. The soil should be kept constantly moist, but not very wet, otherwise they will damp off; give slight shade and a moist atmosphere, but do not syringe overhead, and plunge the pots in a bottom heat of 75°. The compost we grow them in after the plants become established is equal parts peat, leaf mould, and loam from rotted turves or turfy loam, with a free admixture of silver sand, affording free drainage.

CUTTING-IN PORTUGAL LAURELS—PLANTING YEW, AND OTHER EVERGREENS (M. B.).—Our remarks about cutting-in variegated Holly apply to all evergreen shrubs, but especially to Hollies, Yews, and Laurels. You may cut the Portugal Laurel in from the middle of this to the first or second week in next month. If the growths are only irregular you may, by shortening those which are irregular, and retaining the smaller shoots, leave the tree quite feathery; but if very irregular shorten all, cutting the strongest shoots closer in than those which are weak, still leaving all much of the same length in order to secure a well-shaped tree. It is not too late to plant Yews, Laurels, and evergreens, if they be removed with a certain amount of soil attached to the roots. We have less deaths by transplanting at this season than in September and October.

FLOWER-GARDEN PLAN (C. J., Cricklewood).—For the style you propose we think your arrangement will do very well. Scarlet and purple Verbenas would look well in 4.

MUSHROOM SPAWN FAILING (J. F.).—We have examined carefully the pieces of spawn sent. No. 1 we should think has perished from damp. It seemed a mass of worms and larvæ of different insects. Whether such a state of things would proceed from doing the horse we cannot say. No. 2 seems perished, most likely from a little over-heat, but of that you are the best judge. A few hours extra heat will do it. No. 3 is nearly gone, but there are still some good spore threads, and if that was inserted on the 3rd of February we would not yet despair. No. 4 is very fair spawn—looks as if the bed was damp enough, but still, though the threads are a little too far gone in some places, the spawn in such a state ought to produce heavily. Certainly we would trust to such spawn, but if at all damp, or the bed damp, wrap it in dry litter. If the piece sent has been taken from the bed we would say let the bed alone. No. 5 is very fair—not first-rate, nor so good as No. 4, but it is such as we would use with confidence, using it freely—that is, more of it. We have no doubt the bed in the shed will do well; if doubtful you had better have a little fresh spawn. We should use 4 and 5.

HYACINTH CULTURE (Monticola).—You can obtain Mr. William Paul's Lecture on the Hyacinth direct from him. What he has so plainly and systematically stated in his admirable lecture on the propagation and general cultivation of the Hyacinth, both in Holland and in this country, may be fully relied on, and we will not, therefore, refer you to any other work. As we think you will gain all the information you require from it, our answers to your queries will be short. 1st, Yes; the size of the bells may be increased by high cultivation during the year in which the bloom is produced. The spike may also be increased in size and length; but the spike itself, and the number of florets or bells are formed in the bulb during the growth of the previous season. If the bulb were subjected to high cultivation, and received a greater amount of attention, no doubt sufficient matter would be stored up in it to enable it to produce three or more spikes of bloom instead of one; but of course the growers of bulbs of this description would be obliged to charge more for them, as such would require more room to grow in, and a greater amount of manure, &c. 2nd and 3rd, See Mr. Paul's Lecture on the Hyacinth, pages 10 and 11. 4th, The only reason we have for thinking that Hyacinths cannot be cultivated so well in this country as they are in Holland, is the same as that quoted by Mr. Paul, page 10—"In the month of June, at which time the bulbs are ripening, the earth-heat appears to me greater than in any soil of which I have had experience in England."

RETRUBING AGAPANTHUS UMBELLATUS (C. M. Major).—It is too late to retub your plant now; the proper time for doing it is as soon as they have done flowering. You had better supply them, during the coming summer, with plenty of manure water; they cannot be drenched too much with water during their season of growth. As they are plants that will not bloom well unless their pots are very full of roots, they should not be repotted very often. The plants should be well drenched with water several times before they are potted, so that the balls may be thoroughly soaked through. The roots around the outside of the balls should be disentangled before they are put into their new tube, or it will be a long time before the roots will firmly into the fresh soil. Care should also be taken to press the new soil firmly around the ball. If this is not done the water will pass through the new soil, leaving the old ball quite dry. The shift you propose giving them will last them a great number of years.

ROSES IN POTS (Yorkshire Amateur).—Twelve good Roses for pots. Anna Alexieff, C. Cécile de Chabillant, Général Jacqueminot, John Hopper, Jules Margottin, Pauline Lanzeseur, Sénateur Valère, Victor Verdier. **Bourbon**—Catherine Guillot, Souvenir de la Malmaison. **Tea**—Gloire de Dijon, Souvenir d'un Ami.

NAMES OF FRUIT (A Constant Reader).—2, Bymer; 4, Northern Greening; 5, Lewis's Incomparable; 6, Trumpington. (F. D., Pershore).—1, Not

known, too sweet without crispness. 2, Queen Pippin. 4, Bonré de Rasse, from rather late blossoms. 5, Not sent. 6, Not known, a kitchen Apple.

NAMES OF PLANTS (Basil).—Albizia lophantha, often called Azada lophantha. (J. J., Hants).—Your plant is the well-known Dog's-tooth Violet, Erythronium dens-canis. Surely you cannot have shown it to any intelligent gardener. John Edwards must send a better specimen of his Oxalis sufficient to show its habit, and in flower.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending April 8th.

DATE.		BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
				Air.		Earth.				
		Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun.	2	30.084	29.824	58	29	44	42	W.	.00	Fine throughout. [haze; overcast at night.
Mon.	3	30.000	29.804	57	35	44½	43	E.	.00	Fine; very fine in forenoon; partially overcast and dry
Tues.	4	30.171	30.164	53	38	45½	43	E.	.00	Foggy; fine; very fine.
Wed.	5	30.250	30.207	67	44	46	44½	S.W.	.06	Overcast; rain; overcast.
Thurs.	6	30.283	30.196	63	43	47	45	S.W.	.00	Overcast; very fine; rain at night.
Fri.	7	30.183	30.117	65	32	48½	45½	S.W.	.00	Fine; lightly overcast; fine throughout. [at night; cool.
Sat.	8	30.101	30.084	72	30	49½	46	S.	.00	Foggy; cloudless, with bright sun; hot; exceedingly fine
Mean		30.146	30.056	62.14	35.85	46.43	44.14	.....	.06	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE COLD WEATHER.

(Continued from page 258.)

WHEN all these funny eggs are become chickens and the sun shines upon them, and the earth is teeming with insect life, and part of creation bursts into being to feed another part, and a lot of them are luxuriating in a dust-bath and opening their feathers to the sun, we like to see a fly of some sort pass just over them. Up they jump, away they go, their little necks are stretched "upward and onward," till one catches it. If it be large enough to require the captor to stop in order to swallow it, the sight of it in his beak makes him the envious of all the others, and although the event is not so disastrous to him as it has been to the fly, he has to suffer the same chase. Very often he goes till his wings droop, his legs drag, and he is obliged to drop his prize, which becomes the prey of another. Or, let the hen give her danger call while they are dusting, see how they start, and mark the clouds of dust they raise. We are fond of watching these things, and childish as they may seem, we dwell on them because they are in reality essential to the well-doing of chickens. They multiply troubles who would improve or teach Nature. When we see artificially-reared chickens, or hear the complaints of those who have undertaken the task—when we see the attic devoted to hens and chickens, the appliances for artificial heat, the floor covered with inches of dust, sand, and gravel, and yet the poor appearance of the chickens—we cannot help contrasting them with the healthy rogues basking on a naked dry bank, and bearing all the inclemency of January, February, or the most unkind month of March, 1865. Only one thing really torments us, and that is snow. Save us from snow. No scratch for hens or chickens, no grubs, no worms, no insects. The food sinks in deep, and chickens have not the reindeer's gift, of foraging under the snow, or of smelling through it. We like them when they are strong, hearty, and defiant; but often during the tiresome March just gone, we were almost glad that, owing to the scarcity of sitting hens, we had not more chickens—poor little things stepping daintily about, picking some crumbs of choice food, and then listlessly settling down; the head sunk between the shoulders, wings and tail drooping, standing like a Heron watching for fish, and changing their position only, when with a pitiful "peep," the head was put under the wing. What a change came about with the change of wind! Many years ago when smuggling was more thought of, because it was what was called "a hanging matter," an old friend—no, not a friend, an acquaintance—did "a little in that way." He was a fine shrewd fellow, but what with being exchequered, running ashore, and losing cargoes, he left off while yet young with more rheumatism than money. The east wind sent him to bed, but he has often told us that while there, after weeks of confinement, he felt a change of the wind in the night, and his joints softened. We think our chickens did the same: they were joyous

fellows in the morning, while they had been sore grumblers the previous evening. They had been living in a barn, where with our rips we formed a sort of eastern yard, presenting a square inside of open fronts, whilst the backs formed the defence against east winds, torries, rapparees, and everything of the sort. Just as Corny Delany, having nothing but herrings to give his mother, persuaded the good woman it was always Lent; so we, thinking bed the best place for them, kept them much in darkness, persuading the hens it was night. This did well for a time, but the moment the weather changed they burst the bands; they flew over the barriers; they snuffed the sou-wester through the chinks and crevices, and we let them out.

We have them now under a hayrick, along a dry bank under a quickset hedge, and, *horrible dictu*, on the gravelled walks of a kitchen garden. After much experience we are convinced they are good gardeners. They live much among the strawberries; they turn over every leaf, they are continually seeking for grubs and insects, and they do no damage. They are growing fast, and while we watch them daily we say to ourselves, We will make a note of this. Perhaps we shall again next week.

THE WIGTON EXHIBITION OF POULTRY.

THE Committee of the Wigton Poultry Show, by a rigid perseverance and annual increase in the value of their premiums, ensure not only a continuance, but an enlarged amount of local support to their meeting. We have no doubt, however, that the number of entries to the show just closed was somewhat curtailed from the fact of its taking place simultaneously with the one at Accrington, or at least from the latter being held so soon afterwards as on the following days; it was, consequently, impossible for exhibitors to send the same pens of poultry to both. From this cause alone the entries were scarcely numerically equal to those of last season, though the general good quality showed much improvement in the majority of the classes. The weather being most propitious the visitors were numerous, and a love of poultry culture seems fast extending itself throughout the district. As the neighbourhood is very dry, with a gravelly subsoil, none could be more suitable for the raising of young broods, or, in fact, for the maintenance of robust health in the older birds, as every amateur's experience proves that though a damp soil is hopelessly fatal to success, the majority of breeds of poultry will endure without injury even an excessive amount of cold, if the situation is both dry and open. It appears, too, that a very spirited emulation exists between a number of the local breeders around Wigton, and that though truly anxious to excel all rivals the most perfect harmony and goodwill exists on all hands. This is, as it should be, and we are gratified at being able to state this fact, as unfortunately in some neighbourhoods that we could name, the unsuccessful are prone to give way to irritability and severances of friendship, even if fairly beaten.

As might be anticipated a considerable number of these hens or pullets that had commenced early laying were failing a little in condition, and in some instances fast

approaching to broodiness, to which the mildness of the last week may have also contributed.

In the *Game* fowls it was especially so. Perhaps fewer entries of *Brown Reds* never occurred in proportion to the other varieties of *Game* than at Wigton. Mr. Fletcher, of Stonelough, near Manchester, however, exhibited a grand old cock of that colour that secured for its owner a silver cup, as an extra prize offered "for the best *Game Cock*." The *Game* cockerel that took the other cup belonged to a resident of Wigton, Mr. J. Robinson, of West Street. He is a good and remarkably true-feathered *Black Red*, but somewhat smaller than could be wished. It is remarkable that in a large class of *Game Bantams*, not even a single pen of *Brown Reds* was to be met with. There were, however, some good *Greys* and a very nice pair of *Red Pile Bantams* exhibited. The *Golden-spangled* were the best variety of the *Hamburghs*, and the *Black Polish* were excellent. In *Sebright Bantams* the show was a failure; and it seems probable that this somewhat delicate variety does not thrive well so far north; at least, it is rare, indeed, that a good pen is exhibited thereabouts. The prize *Spanish* and the *Grey Dorkings* that took position on the prize list were very perfect, but the remainder of the birds in these classes were indifferent.

Some *Guinea Fowls* exhibited in the class for "Any other variety of poultry" were good, but as discontented and restless as these birds are ever prone to be when subjected to even the slightest constraint.

The *Aylesbury* breed of *Ducks* do not show to advantage from the district around Wigton, the bills, however pure at the outset, soon attaining a yellow hue in the neighbourhood. It is worth bearing in mind that on some waters nothing will preserve the delicate character of the bills, however great the pains and trouble taken to do so. The *Rouen Ducks* were, however, far better than are usually met with, being both a numerous and generally good class throughout. A singularity of the show at Wigton is the offer of a special set of prizes for "Wild Ducks," or rather semi-domesticated *Wild Ducks*, they seeming to be a much valued breed among many of the neighbouring gentry. Even when thus kept their excellence for the table is incontestable. The class for *Ducks* of "Any other variety," produced a good display, the first prize being secured by a pen of *Shell Ducks*, or, as commonly known on some coasts, the "Saint George's Ducks," belonging to Mr. T. M. Armstrong, of Aikhead, and they were shown in absolutely faultless condition, nor can we call to mind a single instance in which the excrescence at the base of the upper mandible of the bill was nearly so well developed as in the drake now under notice. Although we have ourselves kept many of them for years past, so perfect an attainment of this intensely rich coral hue at springtime has not taken place; in fact, to many visitors at Wigton it appeared so thoroughly unnatural as to cause doubts of fair play. This we know, however, that in the wild adult male it invariably takes place at this season, but in the domesticated bird of this species such an occurrence is very rare. This beautiful specimen was hatched in confinement, is perfectly tame, and is some four or five years old. In this class were some crossbreds between the *Grey Call Duck* and the *White Call Duck*, spotted and very uncommon, and a good pen of birds bred between the common wild *Duck* and the *Grey Calls* were also very interesting, and would be very useful for decoys.

A considerable falling-off in the entries for *Pigeons* this year may doubtless be attributed to the extraordinary competition at Wigton last year among the *Pigeons*, the classes throughout being now by far less filled. The competition was nevertheless, though so limited, not at all without a struggle; for superiority the *Carriers*, *Nuns*, *Spots*, *Powters*, *Turbits*, and *Barbs* were the most conspicuous.

GAME (Black-breasted and other Reds).—First, John Brough, Carlisle. Second, D. Tait, Grasmere. Commended, J. Harris, Wigton.

GAME (White and Pile).—First, Jos. Brough, Carlisle. Second, John Brough, Carlisle.

GAME (Duckwing and other Greys, Blacks, and Blues).—First, Messrs. Easton & Mabon, Jedburgh. Second, Jos. Brough, Carlisle. Commended, John Brough, Carlisle.

GAME FOWLLETS (Any colour).—First, W. D. Dickson, Thornhill, Scotland. Second, R. Tate, Leeds. Highly Commended, M. H. Brisco, Wigton. Commended, J. N. Hodgson, Wigton.

SPANISH.—First and Second, J. Wilson, Whitehaven. Commended, J. Harrison, Kendal; E. Fearon, Whitehaven.

DORKING.—First, J. Ganson, Whitehaven. Second and Commended, G. Highfield, Blencogo House.

COCHIN-CHINA (Any variety).—First and Second, Miss Aglionby, Grasmere.

HAMBURGERS (Golden-spangled).—First, J. Wilson, Whitehaven. Second, R. Tate, Leeds. Highly Commended, A. K. Wood, Kendal. Commended, J. Dixon, Wigton; J. Wilson.

HAMBURGERS (Silver-spangled).—First, A. K. Wood, Kendal. Second, R. Tate, Leeds. Commended, Noble, Kendal.

HAMBURGERS (Gold and Silver-pencilled).—First, J. Harris, Wigton. Second, Burrow, Longtown. Commended, J. Moore, Wigton.

ANY OTHER VARIETY.—First, J. R. Jessop, Hull (Black Polish). Second, R. Tate, Leeds (Black Hamburgs). Commended, T. T. Selby, Aspatria (Guinea Fowls).

GAME BANTAMS (Black-breasted and other Reds).—First, M. Redhead, Kendal. Second, Miss Aglionby, Grasmere. Highly Commended, J. Wilson, Longtown; J. N. Hodgson, Wigton.

GAME BANTAMS (Any other colour).—First and Second, Miss Aglionby, Grasmere.

BANTAMS (Any other variety).—Second, J. Wallas, Highmoor. First withheld.

DUCKS (Aylesbury).—First, W. Barnes, Wigton. Second, J. Dixon, Wigton.

DUCKS (Rouen).—First, G. Hetherington, Curthwaite Station. Second, R. Jones, Whitehaven. Highly Commended, R. Tate, Leeds.

DUCKS (Common Wild).—First, A. Robinson, Carlisle. Second, T. Manduell, Aikhead.

DUCKS (Any other variety).—First, J. M. Armstrong, Aikhead (Shell Duck). Second, T. C. Harrison, Hull. Highly Commended, T. T. Selby.

PIGEONS.—*Carriers*.—First, H. Yardley, Birmingham. Second, J. C. Taylor, Middlesborough. *Tumblers*.—First, R. Pickering, Carlisle. Second, H. Yardley, Birmingham. *Powters*.—Prize, E. E. M. Royds, Ashby-de-la-Zouch. *Fantails*.—First, H. Yardley, Birmingham. Second, T. Manduell, Aikhead. *Jacobins*.—First, R. Pickering, Carlisle. Second, Taylor, Middlesborough. Highly Commended, W. Hastwell, Kendal. *Nuns*.—First, H. Yardley, Birmingham. Second, J. R. Jessop, Hull. Commended, R. Thompson, Kendal. *Barbs*.—First, H. Yardley, Birmingham. Second, Taylor, Middlesborough. *Turbits*.—First, R. Thompson. Second, R. Pickering. *Owls*.—Prize, H. Yardley. *Trumpeters*.—First, W. Hastwell. Second, E. E. M. Jones. Any other variety. —First, H. Yardley. Second, I. P. Cullen, Carlisle. Highly Commended, R. Pickering, Carlisle.

BEST GAME COCK (Extra Prize).—First, J. Fletcher, Manchester. Second, W. Boyes, Beverley. Third, Geldred, Kendal.

BEST GAME COCKEREL (Extra Prize).—First, T. Robinson, Wigton. Second, J. Wallas, Highmoor House. Third, Jos. Brough, Carlisle. Highly Commended, J. Barnes, Wigton; T. Robinson, Ulverston.

BEST GAME COCK (County Prize).—First and Second, Jos. Brough, Carlisle.

BEST GAME COCKEREL (County Prize).—First, J. Wallas, Highmoor. Second, Jos. Brough, Carlisle. Commended, J. Gaddes, Carlisle; P. Hodgson, Penrith.

BEST DISH OF ONE DOZEN FINE EGGS.—Prize, J. Wood, Sandwith, near Whitehaven (Cross-bred, Spanish and Game). Highly Commended, Miss Watson, Daleside (Black Spanish); J. Calvert, Warwick Bridge (Black Spanish); E. Fearon, Whitehaven (Black Spanish); Strong, Drumlaning (Cross-bred); R. Tate, Leeds (Cochin and Spanish). Commended, J. Mitchell, Egremont (Brown Red Game); R. Tate (Cochin and Spanish).

Edward Hewitt, Esq., of Eden Cottage, Sparkbrook, near Birmingham, officiated as Judge.

ECCENTRICITIES IN PIGEONS.

In reply to "WILTSHIRE RECTOR," I do not think his hen *Powter* will be injured by laying four eggs. It seems to me a curious case, and I trust he will be careful to notice if she lays four eggs next time. I once before heard of a hen *Pigeon* that laid four eggs, but in that case the evidence was not satisfactory to me. I would advise no hempeed to be given to her, but she may have old tares or barley with her *Indian corn*, and she ought to be well supplied with old mortar broken up. I once found two young *Pigeons* dead in one egg.

How curious are some of the actions of *Pigeons*! Some cocks are so attentive to their hens that they cannot spare time to fetch a single stick for the nest; but I have a *Red House Tumbler* cock so indefatigable in building that he is continually at it, and has carried a small truss of straw into his pen.

Some *Pigeons* seem careless of feeding their own young ones, whereas I have a *Blue-bearded* cock *Tumbler* whose hen was lately lost in a high flight, who has adopted a couple of young ones, which he nurses with great care, and defends with much more zeal than ever he did his own castle.

I have a *White Air Tumbler*, hatched last year, which took it into her head to feed some young ones that laid on the floor by her while she herself was being fed—and this is not the first case I have heard of one young one feeding another. I had last year a young *Black House Tumbler* which, when he first began to be matchable, showed like a hen, paired with an odd cock, and remained as a hen until he tried to be master, when his old mate had to beat him off. This year I have a small *Black Mottled Air Tumbler* which I thought was a hen, so I put it up with an old *Black Mottled Air*

Tumbler cock; they paired at once: but I now feel sure he has deceived me, for the two, although fast paired, both ooo and clap about like cocks. I have a feather-footed Black Mottled Roller hen with eleven flight feathers in each wing, and, what is more strange, I have two hens paired to the same cock, and both sitting in the same nest for the second time.—B. P. BRENT.

THE ACCRINGTON POULTRY EXHIBITION.

THE Accrington Society held a most successful meeting on the 6th inst. and following day, and the management had undergone a very careful improvement. The influx of visitors was beyond precedent, showing that such exhibitions are as popular as ever. The prize list was a very liberal one, and consequently most of the classes were well filled. To produce local enthusiasm a brass band was procured to precede the Committee and Judges to the showyard, and afterwards to remain for the entertainment of the Company. All the poultry were ranged at the same height, and everything that could be done was done to secure a "fair field and no favour" alike for all competitors.

On entering the Show, the company found the first class to be as good and numerous a selection of first-rate single Game cocks as could well be brought together, the competition being supported by a large majority of our best Game breeders. A splendid Brown Red belonging to Mr. Statter was the winner of the silver cup, and it is a rare occurrence to meet with so faultless a specimen. The three winners in this close competition were eventually all Brown Reds; the second prize being taken by Sir St. George Gore, Bart., and the third by John Sunderland, Esq., of Coley Hall, Halifax. At the outset the second premium in this class was given to Mr. H. M. Julian, of Beverley, Yorkshire, for a very powerful and unexceptionably good bird in the hand—a Black Red (pen 267). A complaint in writing having been presented to the Committee and Judges, immediately after the Show opened, from several Game exhibitors, urging that "the breast was dyed black," a very rigid investigation took place in the presence of the Committee, and resulted in the most complete exposure of as dishonourable a piece of deception as could well be imagined. That the imposition was carried out most cleverly no one could deny, for though, except in an extremely powerful direct light, no difference in shade could be discovered, the various tests applied proved beyond all cavil or dispute, and to the unanimous satisfaction of every one present, that the bird had been purposely tampered with. After a number of tests the artificially-applied black on the breast being removed, it not only dyed anything to which it was applied the same hue, but the breast of the bird itself again assumed its natural colour of a partially Brown Red. It was consequently "disqualified" altogether, the only punishment that by present rules can be enforced, though no doubt the public mind will speedily suggest some more stringent rule should such discreditable practices unfortunately continue. The class for Game cocks, locally restricted to four miles round Accrington, was a very tame affair; but the two following Game classes for a cock and two hens were headed by extraordinarily perfect birds belonging to Sir St. G. Gore, and Mr. Fletcher of Manchester. We have seen generally far better collections of *Cochins* and *Brahmas* than were here shown, for, excepting the winning pens, the competition was below that of previous years. The Black *Spanish* were good. The *Hamburgs* were undoubtedly quite a leading feature of the Show; and the closest competition for the Silver Cup, given to the best pen of *Hamburgs*, resulted in a pen of entirely perfect Silver-pencilled (Sir St. George Gore's), taking precedence of the Silver-spangled ones (Mr. Beldon's), that have taken many prizes in their own class. It was one of the closest runs in the Show. The *Polands* were very fine. In Game *Bantam* cocks the entry was a liberal one, and Mr. Munn may rest assured his victory is very meritorious, no less than thirteen birds being favourably mentioned in the prize list. *Aylesbury Ducks* showed strongly; and there were exhibited some perfect *Beunos Ayrean*, *Grey Calls*, and *Rouen Ducks*. The *Turkeys* were first-rate ones.

It is no common occurrence to meet with so excellent a collection of *Pigeons* as those constituting the Accrington Show. All these classes were far superior to those of former years, and the premiums, as an inspection of the appended prize list will show, were very broadly sown. The *Pigeons* appeared to be one of the most popular portions of the exhibition, and it was, in fact, a somewhat difficult task for any but determined individuals to

get a near sight of them, so constantly was this division of the Show thronged by visitors.

GAME COCK (Any colour).—First and Silver Cup, T. Statter, Stand Hall (Brown Red). Second, Sir St. G. Gore, Bart., Wirksworth. Third, J. Sunderland, Coley Hall, near Halifax. Highly Commended, J. Fletcher, Stoneclough, near Manchester (Black Red); C. Chaloner, Workop; Sir St. G. Gore, Bart. Commended, C. W. Brierley, Middleton. Disqualified, H. M. Julian, Beverley, York (died breast).

GAME COCK (within four miles of Accrington).—First, T. Barnes, Accrington. Second, Messrs. Baxter & Furness, Accrington. Third, F. M. Hindle, Carr Hall Mill, Haslingden.

GAME (Black or Brown Red).—First, Sir St. G. Gore, Bart., Hopton Hall, Wirksworth, Derbyshire. Second, J. Fletcher, Stoneclough. Third, T. Statter, Manchester.

GAME (Any other variety).—First, J. Fletcher, Stoneclough (Pile). Second, H. Snowden, Great Horton, near Bradford (Duckwing). Third, Sir St. G. Gore, Bart.

DORLING (Any colour).—First, J. Coppley, Eccleston, Prescot. Second, J. White, Northalerton (Grey). Third, D. Parsons, Cuerden Hall (Grey). Highly Commended, T. Statter, Stand Hall (Silver Greys); D. Parsons (Grey). Commended, Mrs. M. Seamons, Hartwell, Aylesbury.

COCHIN-CHINA (Any colour).—First, E. Smith, Middleton. Second, R. J. Wood, Brinscall Hall. Third, W. Dawson, Hopton, Mirfield (White). Highly Commended, C. H. Brierley, Rhodes House. Commended, J. Bell, Kirkgate, Thirsk (Brown Partridge); F. R. Pease, Southend, Darlington; T. Wrigley, Tong, Middleton (Buff).

SPANISH (Black).—First, H. Beldon, Gilstead, Bingley. Second, L. J. Crossly Manor Heath, Halifax. Third, G. Bridle, Northern Lane, Didsbury. Highly Commended, J. L. Lowndes, Hartwell, Aylesbury; J. Wood, Brinscall Hall; F. R. Pease, Southend, Darlington. Commended, J. Marchant, Halifax.

BRAHMA POOTRA (Any colour).—First, H. Lacy, Hebden Bridge, Yorkshire. Second, W. Hargreaves, Newchurch Road. Third, J. Wood, Brinscall Hall.

HAMBURG (Golden-pencilled).—First, Sir St. G. Gore, Bart., Hopton Hall. Second, C. Tattersall, Myrtle Grove, Waterfoot. Third, H. Beldon, Gilstead. Highly Commended, E. Smith, Middleton. Commended, E. Crossley, Broomfield, Halifax; A. Nuttall, Newchurch.

HAMBURG (Silver-pencilled).—First and Silver Cup for best of *Hamburgs*, Sir St. G. Gore, Bart., Hopton Hall. Second, H. Beldon, Gilstead, Bingley. Third, D. Illingworth, Burley, near Otley. Highly Commended, E. Hindle, Wood Nook, Accrington. Commended, J. Platt, Dean, near Bolton.

HAMBURG (Golden-spangled).—First, H. Beldon, Gilstead, Bingley. Second, A. K. Wood, Burnside, Kendal. Third, J. Whitworth, Bury, Lancashire. Commended, R. Tate, Green Road, Leeds; Sir St. G. Gore, Bart.; J. Roe, Huddfield, Manchester; W. Driver, Kelghley.

HAMBURG (Silver-spangled).—First, Miss E. Beldon, Gilstead, Bingley. Second, J. Fielding, Newchurch, Rossendale. Third, Sir St. G. Gore, Bart., Hopton Hall. Highly Commended, A. K. Wood, Burnside, Kendal; J. Fielding. Commended, J. Fielding.

POLAND.—First, C. W. Brierley, Rhodes House, Middleton. Second, H. Beldon. Third, Miss E. Beldon. Highly Commended, S. Ashton, Mottram, Cheshire. Commended, H. Snowden, Horton, Bradford.

ANY OTHER VARIETY.—First, H. Beldon. Second, J. Smith, Hebden Bridge (White Sultan).

SKILL NO CLASS (Any variety).—First, H. Beldon (Cochins). Second, C. W. Brierley, Middleton. Third, D. Parsons, Cuerden Hall, Preston (Brahmas). Highly Commended, Messrs. Baxter & Furness, Accrington (White Polands). Commended, H. Beldon (Hamburgs); T. Dyson, Halifax (Polands).

GAME BANTAM COCK (Any colour).—First and Cup, J. Munn, Shawclough, Newchurch. Second, G. Maples, Wavertree, Liverpool (Black Red). Third, T. Kenyon, Blackburn (Black Red). Highly Commended, T. Eastham; E. Smith, Middleton; M. Turner, Preston. Commended, A. Clegg, Accrington; J. Rhodes, Thornes near Wakefield; H. M. Wellington, Oakham, Rutlandshire (Black Red); J. W. Morris, Rochdale (Black Red); C. W. Brierley, Middleton; Sir St. G. Gore, Bart.

GAME BANTAM (Any colour).—First, D. Parsons, Cuerden Hall, (Brown Red). Second and Third, C. W. Brierley, Middleton. Highly Commended, J. Munn, Shawclough, Rossendale; J. Rhodes, Wakefield; C. W. Brierley; W. F. Entwistle, Otley, Yorkshire (Pile). Commended, D. Ashworth, Halifax; D. Parsons (Greys); Sir St. G. Gore, Bart., Wirksworth.

BANTAM (Any other variety).—First, C. W. Brierley, Middleton. Second, F. R. Pease, Darlington (Buff Cochins). Third, W. Harvey, Sheffield (White). Commended, C. W. Brierley; F. R. Pease (Silver-laced); H. Beldon (Gold-laced); Sir St. G. Gore, Bart.; C. W. Brierley.

TURKEY.—First, E. Leech, Rochdale. Second, C. W. Brierley, Middleton. Highly Commended, T. Houlker, Revidge, Blackburn.

GERSE.—First, B. Baxter, Elslack Hall. Second, T. Houlker, Revidge, Blackburn.

DUCKS (Aylesbury).—First, Mrs. M. Seamons, Hartwell, Aylesbury. Second, F. M. Hindle, Haslingden. Highly Commended, F. M. Hindle. Commended, Mrs. M. Seamons.

DUCKS (Rouen).—First, H. Beldon, Bingley. Second, T. Houlker, Blackburn. Highly Commended, W. Taylor.

DUCKS (Any other variety).—First, D. Parsons. Second, W. Moorhouse. Highly Commended, C. W. Brierley; T. C. Harrison. Commended, J. A. Bell; H. Bell.

PIGEONS.—Carriers.—First, J. Hawley, Burnley. Second, H. Snowden, Horton, Bradford. Highly Commended, J. Fielding, jun., Rochdale.

Tumblers.—First, E. E. M. Koyd, Ashby-de-la-Zouch. Second, H. Yardley, Market Hall, Birmingham. Highly Commended, H. Yardley; J. Fielding, jun., Rochdale. Commended, W. J. Corbridge, Blackburn; J. Thompson, Bingley; J. Hawley, Burnley. *Barbs*.—First, W. J. Corbridge, Blackburn. Second, H. Yardley, Market Hall, Birmingham. Highly Commended, R. Thompson, Moredale Hall; B. Conterdine, Brookfield, Littleborough. Commended, C. Parkinson, Accrington. *Owls*.—First and Second, J. Fielding, Rochdale. Highly Commended, W. J. Corbridge, Blackburn; H. Yardley, Market Hall, Birmingham. Commended, R. Thompson, Moredale Hall. *Powders or Croppers*.—First, H. Snowden, Great Horton, Bradford. Second, H. Yardley, Birmingham. Highly Commended, E. E. M. Koyd, Ashby-de-la-Zouch. *Fantails*.—First, H. Yardley. Second, W. Westwell, Great Horwood. *Turbits*.—First, R. Thompson. Second, H. Yardley. *Dragons*. First and Second, H. Yardley. Commended, J. Thompson.

Transports.—First, H. Yardley. Second, H. Middleton. Highly Commended, E. E. M. Royd. Commended, W. J. Corbridge; T. Barker. *Any other variety.*—First, H. Yardley. Second, O. A. Young.

The Judges were Mr. Joseph Hindson, of Everton, Liverpool; and Mr. Edward Hewitt, of Sparkbrook, Birmingham.

THE SUBSCRIPTION FOR MRS. CHITTY AND FAMILY.

ALTHOUGH I can add nothing to the eloquent appeal of "Our Chaplain" on behalf of the widow and fatherless, I am very desirous that bee-keepers should not be behind-hand in the good work. I recognise the names of some of our fraternity in the list of subscriptions already published; but in such a cause I may perhaps venture to remark that the Cornish motto of "One and All" should be promptly and energetically acted upon, if the good work now in hand is to result in substantial benefit to the bereaved wife and fatherless children of one who has so suddenly disappeared from amongst us.—A DEVONSHIRE BEE-KEEPER.

ACCLIMATISATION AT THE ANTIPODES.

I AM indebted to Mr. Edward Wilson, late President of the Association, for the perusal of the third annual report of the Acclimatisation Society of Victoria.

Alas! that I should have to use the word "late" in connection with Mr. Wilson and the office which he has so ably filled from the very commencement, and alas! for the cause which has compelled him to press his resignation. We learn from this report, that "it is with unfeigned regret that the Council have to state that, in consequence of a complaint in his eyes rendering necessary another visit to Europe, Mr. Wilson has, in spite of their earnest remonstrances, pressed upon the Council his resignation as President, which resignation the Council have most reluctantly accepted." Mr. Wilson is accordingly once more among us, and this time unfortunately with the view of seeking relief from the skill of the British faculty. That his restoration may be both speedy and complete must be the earnest prayer of every well-wisher to the cause of acclimatisation and of progress.

Foremost among the Society's achievements during the past year comes, of course, the successful transportation of salmon ova to Australia. Regarding this feat the Council announce that, although "from the few ova that were retained in Victoria it cannot be asserted with certainty that salmon is yet established in the colony, enough has been done to show that there are no insuperable difficulties in the way; whilst in Tasmania complete success has been attained."

Another subject of congratulation is the introduction of the gouramier from the Mauritius. Twenty-four of these desirable fish reached Melbourne alive, and there is every reason to hope these will establish the species in the colony.

The alpaca experiment, from which so much good was expected, appears unfortunately to have turned out an almost total failure. Nothing daunted, however, by his late ill success, Mr. Duffield is about to undertake a second attempt to introduce the alpaca into the colony.

The following paragraph, relating as it does to the Italian bees exported from my apiary in 1862, is peculiarly interesting: "As a contribution of very particular interest to the cottager, the introduction of the Ligurian bee may be adduced, that insect being probably, from its industrious and wonderfully prolific properties, the most valuable in the world. This bee is multiplying with almost incredible rapidity, and will soon be accessible to all classes." Connected with this subject, I find an advertisement in *The Australasian*, of the 24th of December last, offering stocks of Ligurians for sale at £10 each, whilst swarms of common bees are offered at 20s. each.

Just at this time, when such praiseworthy efforts are being made to check the destruction of small birds, both in this country and on the continent, the following paragraph may be deemed instructive as well as interesting.

"In a country so subject as this [Australia] to the ravages of insects, the case of the agriculturist has always been carefully considered. Hundreds of industrious farmers have

even this year been ruined by the caterpillar, and similar visitations must necessarily be expected. The introduction of insect-destroying birds has therefore been carefully attended to; and with this has been combined an effort to surround our colonial residences with those interesting associations which constitute no slight portion of the charms with which the name of "home" is ever surrounded. The thrush, the blackbird, the skylark, the chaffinch, the sparrow, the Chinese sparrow, the Java sparrow, and a most active and interesting bird the Indian mino, may now be considered thoroughly established, and are rapidly extending by natural means through the colony. The goldfinch, the linnet, the greenfinch, the yellowhammer, the ortolan, the canary, the robin, and many kinds of the smaller birds of other countries are being accumulated in the aviaries of the Society, and many of them have already bred there. The nightingale and the hedge sparrow have been promised us by benevolent ladies at home, and the Queen herself has made an effort to supply us with the rook."

Appended to the report are papers on various subjects read at the Society's meetings. The entire pamphlet is eminently interesting and highly suggestive, and most heartily do I, for one, wish success to the Acclimatisation Society of Victoria.—A DEVONSHIRE BEE-KEEPER.

TRANSFERRING BEES—STOCK INACTIVE.

I HAVE two stocks of bees, each two years old, in old straw hives, and I wish to transfer them into two Woodbury hives; will you have the kindness to tell me what is the best time of the year for performing the operation?

Would you also advise me respecting a stock in a Woodbury hive? It appears weak, only a few bees coming out; while in my other stocks all is now bustle and activity. Near the Woodbury there were between thirty and forty dead bees the other day and several dead ones on the alighting board. On looking in at the window to-day there was nothing but empty comb to be seen. Has the hive been plundered, do you think; or would you advise feeding? I lifted it off the stand yesterday, and it was by no means light. Still, there appears to be nothing going on inside beyond a lazy crawling about of the bees.—A SUBSCRIBER.

[Next month (May) will be a very good time for the operation, which is most conveniently performed on well-populated, but not over-crowded stocks. Your Woodbury hive may very probably be queenless, but with a hive of this description ten minutes' internal examination will solve the mystery. The readiest way of accomplishing this is to commence by removing a side comb; then lift out and examine comb after comb, depositing each in the notch occupied by its predecessor, and finally placing the comb first taken out at the opposite side of the hive to that from which it was taken. In repeating the operation the process should be reversed, so as to restore the combs to their original position.]

ARTIFICIAL SWARMING.

I HAVE several stocks of bees in common straw hives, and this season I want to increase my stock of bees considerably in improved hives and boxes; but I do not want to run the risk of swarming, as I am not at home during the day, and the consequence would be that most of them would be lost, as was the case last year. Now, will you be good enough to inform me if the following plan of artificial swarming will answer, or any improvement upon it? I intend towards the middle of this month to place under the stock hives the empty hives I want to be tenanted, but I do not know how long it is necessary to leave the stock hive at the top, and which you remove to a fresh place. I shall be much obliged if you would answer the above questions, or suggest any other plan. I cannot run the risk of letting my hives swarm. Do you think it better to confine the bees in the fresh hive for a day or two after the stock hive is taken off?—J. A.

[The plan you describe will not result in the formation of artificial swarms, but if you stop up the entrances of the old hives and compel the bees to work up through the new ones they will most probably make combs in the latter, and ultimately transfer the seat of breeding to them. When

this is effected the old hives may be removed, and their contents appropriated by the apiarian; but the time required to effect the change depends entirely on the season and the strength of the colonies. This appears at first sight an easy mode of transferring bees to new hives, and has been frequently recommended as such. It is, however, open to the serious objection that they are very liable, under such circumstances, to construct an undue proportion of drone comb, and when this takes place it is fatal to the future prosperity of the stock. Your best plan will be to multiply your colonies and stock your improved hives with artificial swarms formed in the manner described and recommended by Mr. Woodbury in No. 161 of our new series.]

HONEY GATHERING FROM CLOVER.

"P. M." says he takes one crop off the clover and then one from the heather, but he can never take one off the clover, for the tongue of the honey bee is too short, and never takes anything from clover. The bumble or humble bee has a long tongue, which can enter the clover.—T.S.

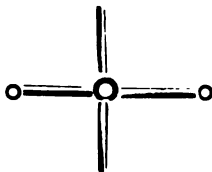
["P. M." doubtless meant the white clover, although he did not specify it. Although the honey in red clover is not accessible to the hive bee, the white variety is well known to be one of the best, if not the very best, of our bee flowers.]

PARROT MANAGEMENT.

SALT, meat, and brass are all pernicious to Parrots. Meat produces liver complaints; contact with brass, cancer of the tongue—of this I have seen a miserable victim. It should be avoided in all cages as they will gnaw it. There should be no wire grating at the bottom of their cages, but dry, well-sanded or gravelled boards. They like to roost flat-foot at the bottom. Sometimes Parrots in a wild state roost in the hollows of trees and rocks, and it is cruel to keep them with their claws always painfully stretched over round and slippery perches. Two perches should furnish their cage, one less than the other. This eases the feet, which sometimes become galled, and the birds can hardly stand, yet by-standers do not comprehend their uneasiness.

Male birds are subject to fits in the spring, and some to cramp in the stomach, which makes them stagger. Place the bird on a flat bottle of warm water, well wrapped round in flannel not to scorch his feet; he likes the warmth, and will sooner recover. Parrots eat the stones rather than fruit itself of grapes, cherries, and plums. These last must be cracked for them. They delight in the green buds and young seed of cabbage, and Indian corn when young, and will tear off its many sheaths and devour two or three if they can get them, also vegetable marrow boiled and caravansa white beans, broad beans as well. An occasional nutmeg does the Parrot good. A capital contrivance for a perch is to have a round tabular dish in the middle, and then two perches running under it thus—

The two o o hold water and sop, and the table, screwed to the upright perch, the general food; the whole must be kept well scrubbed and clean. Then the bird makes no mess about the room.—ORNITHOLOGIST.



LURING BIRDS TO A HOME.

If "AMATEUR" will procure eggs of the birds she (for "A. J. G." presumes "AMATEUR" is a lady) wishes to have, and take the Sparrows' eggs carefully out of the nests and replace them with an equal number of Bullfinch or Linnet eggs, the Sparrows will hatch and rear them if the transfer is done with discretion. The eggs to be hatched must be taken very gently and carried from one nest to the other in cotton or wool in a box; they must be handled as little as possible, and, of course, put into the Sparrow's nest while the bird is off it, and the nest must not again be visited, otherwise the bird will forsake it.

I am not sure whether a Sparrow would hatch Blackbirds'

or Thrushes' eggs, but I fancy not; however, it might be worth trying.

"A. J. G." has seen Starlings induced to build by having a small packing-case, made to resemble a small dog-kennel, and placed at the top of a pole. On the little platform in front of the house the old birds used to feed their young, a most amusing sight, and the chattering of these birds is very curious. The pole was a common larch pole 10 or 12 feet high, the box was about 18 inches long and about 14 inches high, and the little platform was about 18 inches square in front of the house, it was a projecting piece from the boards on which the house was fastened. The birds came back to it year after year.

Do Brahma Pootras generally lay while they are young? "A. J. G." has some hatched last April, and they are said not to have laid yet.

AN "AMATEUR" asks "What can I do to induce Bullfinches to come into my garden, and what sort of meat should I provide?" I heartily join him in this inquiry in the hope that some one will point out a means by which he may be supplied with Bullfinches, Chaffinches, &c., to the benefit of myself and others who grow pear, plum, cherry, and gooseberry trees, and thus be the means of transferring those troublesome pests to "AMATEUR."

We can willingly dispense with them and would recommend him to try the plan of growing such trees, of the buds of which they are so fond that I have had some trees not only rendered fruitless, but nearly destroyed by them at this season of the year. The centre of the bud is enclosed and blanched, therefore sweet. It has been said by some they find grubs inside, if grub is intended I readily fall into that opinion, but I have repeatedly examined buds and never yet have found grubs within any of the buds on their favourite trees.—W. G.

OUR first TAME PHEASANT laid on the 5th of April—a Chinese hen.—J.

YESTERDAY (April 5) I heard and saw the Chiff-Chaff, being the first of our summer visitants I have observed this year.—ARTHUR SPARY, St. Alban's.

OUR LETTER BOX.

CRYSTAL PALACE POULTRY SHOW (D. N.).—Apply to the Secretary, Crystal Palace. We do not know.

DUCK LAYING SOFT EGGS (J. J. H.).—Your Ducks are over-fed. Give them whole oats, in a trough, with plenty of gravel, the whole covered with water. Meal and worms are not the very best of food. Your Guinea Fowls ought to lay in a fortnight.

HATCHING PARTRIDGE COCHIN EGGS (Partridge Cochins).—We believe their eggs will be good for a month after laying. Some limit the time to a fortnight.

COCHIN COCKEREL'S LEGS PARALYSED (F. G.).—Your cock is suffering from cramp, or from weakness, or both; probably the latter. If he is now nine months old, he would be an August bird; before he was out of harm's way he was overtaken by the long winter which has just terminated. He has grown in length and height, but not in strength. It is at all times a mistake to keep an autumn bird for a breeder, but doubly so after such a trying time. His treatment will be castor oil every other day for a week, followed by stimulating food, as bread and ale, or raw yolks of egg. In our opinion he is not worth saving.

CHICKENS DYING BEFORE COMPLETELY HATCHED (Poultry).—Your eggs are too dry; moisten them every day for a week before hatching. We should think your hens had lice. Let them have plenty of dust in their haunts. To bring your Hamburgh cock into showing condition there is no better food than ground oats mixed with milk. Roasted fresh meat, chopped fine, and chopped eggs, are also good.

BUFF AND PARTRIDGE COCHINS IN SAME RUN (Percy Cross).—We advise you to wait at least a month. Others, and good authorities, will tell you a fortnight is enough.

PARROT MANAGEMENT (A Subscriber).—Your Parrots may be fed on bread and milk, soaked Indian corn, and such fruits as they will eat. Let them have a soup plate, or some shallow vessels of water, to bathe in; but if they do not bathe voluntarily give them a good shower bath from a watering-pot during fine weather. Their plucking off their feathers may arise from irritability in the skin, caused by improper food, as meat, or from insects. If from the latter cause dust some flowers of sulphur among the feathers. The raw place may be anointed with unsalted butter or lard. When the skin is more healthy, new feathers will grow where those have been plucked out. If bitten off, the stumps will be replaced at the moulting time. To teach them to talk you must make them tame and familiar, and constantly repeat the words distinctly to them which you desire them to learn.—B. P. B.

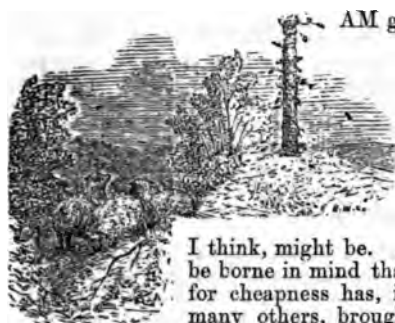
BEES DYING (J. Bryan, Royston).—Your bees must probably died of dysentery, brought on by long confinement during the late protracted winter. If there be nothing amiss with the combs beyond a slight mouldiness, we should not be afraid to use the hives as they are.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	APRIL 18-24, 1885.	Average Temperature near London.			Rain in last 38 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
18	Tu	EASTER TUESDAY.	60.3	35.8	48.1	15	0 45	59 46	0 1	13 10	0	0 44	105
19	W	Apple flowers.	60.3	34.9	47.6	8	58 4	0 7	37 1	22 11	23	0 58	109
20	Th	Onion flowers.	61.8	34.7	48.1	14	56 4	2 7	12 2	after.	24	1 11	110
21	F	Sun's declination 11° 58' N.	60.7	37.3	49.0	14	53 4	4 7	41 2	53 1	25	1 23	111
22	S	Beech foliage.	60.4	37.5	48.9	20	51 4	6 7	10 3	14 3	21	1 36	112
23	Sun	1st, OR LOW SUNDAY.	60.3	36.7	48.5	20	49 4	7 7	38 3	35 4	27	1 47	113
24	M	Butter-burr flowers.	60.2	35.7	48.0	15	47 4	9 7	9 4	55 6	28	1 58	114

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 60.6°, and its night temperature 36.1°. The greatest heat was 77° on the 19th, 1854; and the lowest cold, 18°, on the 24th, 1854. The greatest fall of rain was 0.60 inch.

GLASS FOR HORTICULTURAL PURPOSES.



AM glad that Mr. Pearson has called attention to the indifferent quality of sheet glass, and I can confirm all he says respecting it, as it is certainly not so good as it ought to be, and, I think, might be. It must, however, be borne in mind that the competition for cheapness has, in this case, as in many others, brought a very inferior article into general use; and it is to be feared that much of what is rejected for dwelling-house windows is worked into horticultural buildings. The remedy, however, lies, to a certain extent, in the hand of the builder, and, by insisting on only good clear glass, he may obviate much of the annoyance caused by breakages from natural causes, provided the glass be also well tempered, and in other respects good. Sheet glass, however, has some defects in its manufacture which it is difficult to rectify; and I very much question whether any of it is as strong as the old crown glass of the same thickness, but very little of the latter was made anything approaching the thickness that is now given to sheet glass in most cases; and glaziers have some excuse for clinging so pertinaciously to the old kind whenever it can be used to advantage. The subject is well worthy of a discussion in the pages of THE JOURNAL OF HORTICULTURE, and I hope to have the opinion of some of the glass manufacturers. In my own case I may say that, in all fixed glazing, I have for several years advocated the use of sheet glass of 26 ozs. to the foot; and if this be good, and in squares not exceeding 2 superficial feet, the breakage by natural causes ought not to be much. I attribute much of the damage done to glass in frosty, and even in hot weather, to such glass being, as Mr. Pearson says, "badly annealed;" and, in some cases that have come under my eye, the worst kind in this respect is the Belgian glass, which, on account of its cheapness, has been largely imported into our markets. To all appearance this glass is equal, or perhaps superior, to our own of the like kind; but it certainly is more liable to break, and consequently causes great annoyance.

I should much like if some one conversant with the manufacture of glass would give us the respective amount of elasticity in Belgian and British sheet glass of the kinds usually employed in horticultural buildings; for, however small may be the elasticity of either, there is no question that the one which possesses the most is least likely to be broken, more especially from natural causes. I am certainly of opinion that home-made glass is less brittle than that from the continent; but as to the causes which render it so I can give no opinion. Perhaps the

No. 212.—Vol. VIII, New Series.

raw material may be a better, or, as Mr. Pearson says, the annealing process may be better understood or carried out; while, on the other hand, Belgian glass presents quite as even a surface, and is, perhaps, more white than the same kind made at home. I have occasionally made some experiments with long narrow strips of glass by bending them almost to the breaking point, and a piece 2 feet long will bend considerably. What opportunities I have had of trying both kinds of glass lead me to give the preference to the home-made article for that quality which may be designated toughness. I may, however, be mistaken, and would much like to hear the opinion of others on this matter. I may also remark that the stouter kinds of glass seem to resist the action of frost better than the old thin crown glass, but there are other causes of breakage which are not so easily accounted for. A few remarks on these may, perhaps, throw some light on the subject.

In glazing with large squares, or rather with long ones, it is not unusual for glaziers to fasten them in their place with small nails, and, if there should be a bend in the glass, to let the nail press that part, so as to have it nearer a level than it was before; the result often is that, in a day or two afterwards, the square is broken. Now, how is this to be accounted for, as no fracture was visible at the time the square of glass was fixed in its place? but such cases are of frequent occurrence. The only theory seems to be that change of temperature acts on the glass, and compels it to disengage itself, or partially so, and when the resistance of the nail cannot be overcome a fracture is the result, and I have seen the same thing occur after a cold night; but the breakages attributable to this cause are few compared with those which arise from the action of heat and cold in another way. One of the most common of these is the freezing of the moisture in the overlaps of the roof, which, in the case of thin glass, causes great destruction, more especially if such overlaps are wide, and admit of a large amount of moisture being collected, and, on its expanding with frost, a longitudinal crack is formed in one of the squares; this, though almost imperceptible at first, only requires a very slight pressure of the finger to make it run a long distance up the square. This is more especially the case with the old crown glass; but sheet glass is liable to the same evil, though to a less extent, in consequence of its being thicker, and lying more flatly on its bed. Tightness in the glazing-bar may, perhaps, at times occasion a breakage, but I do not think this is often the case; neither do I consider that the expansion and contraction of metallic bars is to be blamed for the loss of glass so often attributed to that cause. I am more disposed to think that vibration has something to do with the breakage; and in lightly-constructed iron houses the loss is often considerable, especially if the squares are small, and the glass thin. Hailstorms are an exceptional cause of damage, which it would be well to guard against by only using thick glass; but the loss from such causes is only likely to occur once or so in a lifetime, but when they do they are very disastrous. I have seen upwards

No. 264.—Vol. XXXIII, Old Series.

of £500 damage done to the glass in a garden, and believe this has been exceeded in some other cases.

Since the first introduction of sheet glass, its manufacture has certainly improved much in one respect—its surface is more even and smooth than it was at first, when the face of much of the glass that was then made presented little else but a succession of convex lenses, which told with destructive effect on the plants underneath. These defects have certainly been modified; I wish I could say the same of the little specks that show themselves in greater or less number on all low-priced glass, and certainly do no good. These specks are more common than of yore, and tend much to detract from the general character of sheet glass. In regard to toughness, I fear no improvement has taken place; on the contrary, I think it is not so good. Possibly if our manufacturers were told of the defect complained of by Mr. Pearson and others, they might improve the article; at all events there seems no reason to rest satisfied with it as it is, and as its brittleness no doubt arises from its imperfect annealing, it is not likely that an improved mode of performing that process will much increase the price. As the manufacture of sheet glass has of late years vastly increased, some mode of furnishing a better material may be looked for, provided the consumer do not too rigidly insist on a low price being given for it. With regard to the manufacture of sheet glass, I believe that instead of being blown into a globe-shape when taken from the furnace, it is worked into a hollow cylinder, and while in a semi-fluid or soft state, one side of the cylinder is slit up, and I presume the ends cut off, and the glass sheet is then opened out and flattened. This process, as will be seen, must expand the inner side, but whether that affects the temper of the glass or not after annealing is more than I can say. A similar expansion of the inner side takes place in the manufacture of crown glass, which is blown through a long iron tube into a globular shape before a very hot fire which keeps the mass soft, and while in that state a hole is struck in that part of the globe immediately opposite to the side where it is attached to the iron rod, and being held in front of the fire and whirled round rapidly near to it the hole enlarges, and the globe by degrees becomes compressed, then basin-shaped, and as it continues to revolve it becomes flatter, but is never quite flat, always being more or less slightly saucer-shaped according to the dexterity of the workman who gives the finishing turn. This glass is then broken from its fastening in the centre to the iron tube and carried to an oven to cool gradually, the place where the tube was attached to it forming the "bullions," that are sometimes used in stables and other places. I believe, however, that sheet glass has in a great measure superseded the old crown glass, except in cases where the glazier has the privilege of supplying whatever kind he likes, and then the greater ease with which crown glass is cut, especially for small squares, when its curved character does not matter much, offers a great temptation to him; but for all horticultural structures sheet glass is so convenient that the old crown glass may be said to have fallen into disuse, excepting for repairs to older buildings where it was originally used, and where a thicker kind could not well be employed.

Some years ago a description of rough plate glass was strongly recommended by some as possessing qualifications in which the sheet glass at that time was deficient, but it has failed in some of the points aimed at, and is certainly not so much used at the present day as it was six years ago. Its principal merit is thickness, and, consequently, strength, but though not so clear as its rival, it is not sufficiently opaque to allow of shading material being dispensed with in the case of plants in flower, which was set forth as one of its merits, and in appearance it is far from equal to good sheet glass, and assuredly sooner becomes dirty. I have not had much experience with it myself, and my observations are based on what I have seen elsewhere. I hope, however, to see a better class of plate glass brought into use for horticultural purposes than any yet offered to us, clear, smooth, and transparent, or, when wanted, of any hue to suit the requirements of plants. Plate glass of a good quality is certainly too dear for that purpose yet; but it is not very many years since it was double the price it now is, and though much of the reduction in price is owing to the repeal of the duty it is not entirely due to that cause, and I hope

to see other modes of manufacturing it, so as to present it to us in a cheaper form.

Connected with this subject is that of glazing, which certainly is also capable of further improvement, but I confess that I am unable to offer any hints as to how that may be effected. I look forward to putty being superseded by some adaptation of india-rubber, or, perhaps, by squares of glass made to fit like pan-tiles, one edge overlapping the other.

In conclusion, I must again express a hope that some manufacturer of glass will throw some light on the complaints so justly made against sheet glass, and at the same time point out a remedy. This, it is to be hoped, will not prove an expensive one, as the increasing demand for glass houses renders the cheapness of the material they are glazed with an indispensable consideration; but if greater efficiency can be attained at only a trifling increase of expense, then let no one begrudge that outlay.—J. ROSSON.

LUCULIA GRATISSIMA CULTURE.

THIS, though commonly grown in a stove, is more properly a greenhouse plant, flourishing under the same conditions as the Camellia, and making an admirable conservatory plant. Planted out in the conservatory border it attains a large size, and has a very striking appearance when covered with its extremely fragrant and beautiful flesh-coloured blossoms, in November and onwards till spring. It is also a good pot plant, and does well in a sitting-room when in flower.

Presuming that it is to be planted out in a greenhouse or conservatory border, the soil should be dug out to the depth of 2 feet, and 2 or 3 feet in width; then 6 inches of brickbats or coarse rubble should be laid at the bottom, it being important to have perfect drainage, and this should be covered with a layer of turf, grass side downwards, preference being given to turfy heath mould from a common, cut 3 inches thick. Thus there will be space left for 15 inches of soil, but to allow for settling, 18 inches should be put on; it may consist of one-third rather strong yellow loam, taken 3 inches thick from a pasture, and laid in a heap for six months, or it may be used fresh for border-making, but not for growing plants in pots; to this add two-thirds of sandy peat, also taken off 3 inches thick, and from where the soil abounds in particles of fine silicious sand. Chop up these materials roughly with a spade, breaking and blending them together, but on no account screening. It is well to form the border when the soil is in a tolerably dry condition. A trellis should be provided for the plant, and the situation ought to be light and well ventilated, particularly during the early autumn and winter months; but when making new growths, the *Luculia*, like the *Camellia* and *Asalea*, requires slight shade. The best time to plant is early in spring. Select a plant that has not become pot-bound, but one of free growth and not more than a year old; a cutting of the previous year will do. If an old plant is put in, the ball ought to be broken and the roots spread out, the collar being elevated rather than kept low in the soil.

After growth has commenced in spring, and during the summer, the *Luculia* requires to be watered freely, but in September the supply should be gradually diminished, until the minimum is reached in the beginning of October. After that period water sparingly, keeping the soil neither dry nor wet, for in the latter case the fibres of the roots are soon injured and the buds fail to open, and a deficient supply of moisture is attended with similar results, the leaves falling as well.

If in the first year the plant exhibit a tendency to become bare of shoots, cut it in at planting, and stop during the summer. This will induce the production of side-shoots. Be careful not to overcrowd the plant, but train the shoots in regularly, and so that light and air may be freely admitted to all parts. It will not flower much the first year, nor, indeed, until the border become occupied with the roots. In the second year it will grow vigorously, but the shoots must not be shortened nor stopped except before growth commences. Two years after planting, or in the autumn of the second year, it will cover about 50 feet of trellis, and in most cases flower freely, producing cymes of flowers 5, 7, or 10 inches in diameter.

The *Luculia* is rather subject to attacks of red spider, and should therefore be syringed overhead during the growing season up to September, directing the force of the water against the under sides of the leaves. Owing to this pest being allowed to remain undisturbed for a length of time, we frequently see the plant with a few leaves at the ends of the shoots only, and, consequently, presenting a very unsightly appearance. Any house kept at greenhouse temperature will grow this plant well, it having been found to succeed in houses from which frost was only excluded, the thermometer occasionally falling as low as 86°.

When grown in pots the same compost is employed as for planting out, and the greatest care must be taken to render the drainage efficient. Potting should be done in spring just before growth commences, and carefully so as not to injure the young fibres, the plant being impatient of having its roots frequently disturbed. After potting, in March or April, or if this is not required the drainage having been looked to, the plant may be cut in if out of shape, and placed in a temperature of from 50° to 55° by night, preserving a moist atmosphere, frequently syringing overhead, and giving slight shade. After the growths are made the plant should be gradually hardened, have more light and air, which will usually be the case in July, and be placed out of doors in a warm situation, but screened from the midday sun. By the middle of September it should be returned to a vinery, or any light, airy house with a temperature of 50°. It will then grow and form its beautiful flower-heads. Whilst out of doors the pot should be protected, and the soil kept moist, otherwise the fibres will perish, and though the flower-heads may form they will fall off without expanding. If a cool house is at command, it would be better to place the plants there, an airy greenhouse being a good situation, and the supply of water should not be more than sufficient to keep the soil moist, syringing, however, if there is the slightest indication of red spider.

Those who have not the means of giving the plants a little extra heat whilst making new growths, may continue them in the greenhouse until the middle of June, when they may be placed out of doors in a warm situation, plunging the pots in ashes, or surrounding them with moss to prevent the destruction of the fibres, at the same time giving plenty of water and protection from hot sun. In September they should be returned to the greenhouse, though a vinery or cool stove is better, and they will grow freely, and form their flower-heads, which will expand and diffuse their fragrance during the winter. Under this treatment, and making the wood in autumn, the *Luculia* usually flowers more certainly than when forced into growth in the spring and early summer, though the flowers are not so fine, but not so liable to fall before expansion. This is usually caused by the destruction of the fibres, in consequence of the soil being sodden after the growth has been made. Another cause is red spider exhausting the leaves of their juices, and preventing the ripening of the wood.

The *Luculia*, in whatever structure it is grown, requires a certain amount of shade, and a plentiful supply of water at the root, and moisture in the atmosphere, and when growth is made exposure to more light, a well-ventilated, drier atmosphere, and a gradual diminution of water at the root, yet never allowing the soil to become so dry as to affect the foliage. Though usually treated as a stove plant it will do much better in an intermediate house, and still better planted out in a conservatory border. It is frequently attacked by green fly, especially the flower-heads, the remedy for which is fumigation with tobacco.

It is propagated from cuttings of the half-ripened shoots, taking off the points of the shoots with two or three joints, removing the lowest leaves, and cutting transversely below the lowest joint. Insert the cuttings down to the lowest leaves in sandy peat and loam, with a large proportion of silver sand, and plunge the pot in a brisk bottom heat of 75° to 85°, covering with a bell-glass if the air is dry. When rooted gradually harden off, and repot, keeping the young plants under rather than over-potted. See that the drainage is efficient. Stop at the third joint, or the fifth at the most, but do not stop the shoots that are expected to bloom in the ensuing winter, except prior to the growing season. Young plants will generally flower at one year old, and a small plant in an eight-inch pot forms a very ornamental object for

a sitting-room. The *Luculia* is one of the finest of winter flowering plants, and deserves a place wherever there is a conservatory, greenhouse, or cool stove.—G. ABBEY.

SOIL AND SITUATION FOR RHODODENDRONS.

MR. ROBSON, in an article on the *Rhododendron*, justly remarks that they will accommodate themselves to a variety of soils. Many years ago, when on a visit to my brother in the west of Cornwall, I found him planting some of the best sorts of *Rhododendrons* in yellow loam taken from a coppice wood, which lay high and dry. I remarked to him that he could not expect much growth in that kind of soil. His reply was, "I certainly do. All you see around are planted in soil of the same sort;" and I was obliged to acknowledge that I had never seen plants more healthy.

About ten years afterwards I again saw them in full bloom, and a more lovely sight could not be seen—the shrubs, from 6 to 8 feet high, one mass of flowers in endless variety. The soil these fine healthy plants were planted in was a heavy yellow loam, with not a particle of peat in it.

His method of planting was to have a plentiful supply of leaves and dung well mixed up with the yellow loam, and as soon as the plants were planted to soak them well with water—not a dribble, as we often see, but a regular flood. A few days afterwards, when settled, the soil was closely pressed around them.

The first season after planting all were kept mulched with dung. Sandy peat, or any other variety of peat, would not answer for *Rhododendrons* in that locality. This may be accounted for, as it is in a mining district, where nearly all the peat soil is impregnated with minerals injurious to vegetation.

Previously to seeing the above I had been to much trouble and expense in obtaining from a distance peat to plant some of the best sorts of *Rhododendrons* in. In the locality in which I now reside (the west of Devonshire), may be seen *Rhododendrons* upwards of 20 feet high, and nearly as many feet through, growing in the natural soil, which varies from light hazel to heavy yellow loam, resting on rotten slate and some on freestone. Here they seed and produce their seedlings, not by twos or threes, but by tens of thousands, in crevices of rocks, by the sides of walks, and even on old Oak trees—in short, in any place where seeds can find a resting-place to vegetate on. Here they grow and flower in all the varieties that *Rhododendron ponticum* has produced; miles of them grow in great luxuriance by the sides of drives and walks, and interspersed amongst trees, woods, and shrubs, where they assume the appearance of indigenous plants.

I think the situation has as much to do with the growth of *Rhododendrons* as the soil. Here we have abrupt hills and dales, and sheltered from the northern and eastern blasts; where the Tamer meanders through the valley, and rivulets join it in its onward course, moisture ascends, and woods, trees, and hills give shelter and shade. In such situations the *Rhododendron* for the last fifty years has found a genial home. Previous to that time a *Rhododendron* had not been seen within ten miles of this locality. Here, as Mr. Robson remarks, the Foxglove is at home; Ferns abound; lichen and moss cover the hard-wood trees; and trees of the Fir tribe become prematurely old. Here also the Primrose, wild Hyacinth, Wood Anemone, Columbine, and a host of other indigenous plants cover the ground. In such localities, where Nature has been so bountiful, the *Rhododendron* will always find a suitable home.—E. C. E.

PICEA PINSAPO.—I am glad to hear reports made of this gem of the pinetum, and in reply to Mr. Gardiner, who at page 266 mentions one 24 feet high, I beg to state that a very fine one at Linton Park is 29 feet high, and so densely clothed with branches thickly set with foliage, that a person in walking round it can only catch a very slight glimpse of the bole in one or two places; for about 20 feet the whole is a perfect cone. The extreme branches give a diameter of about 19 feet, and in appearance nothing can be really more handsome. I may add that the growth of the last few years has averaged 2 feet each year; the soil is moderately deep, but dry, and the situation somewhat sheltered

In close contact with it is a *Cryptomeria japonica* about 40 feet (or nearly that height, for I did not measure it), and perfectly straight, the slender tapering top running up like a fishing-rod, while the diameter of the branches does not anywhere exceed 12 feet. As compared with others this is considered a pretty good specimen, but the most admired tree we have is *Pinus insignis*. I have not been able to measure this accurately, but will do so on the first opportunity.—J. ROBSON.

BLIND STRAWBERRY PLANTS.

MANY of your correspondents are constantly complaining of their Strawberries "going blind," and it has occurred to me that perhaps a little light may be thrown upon the cause of failure in so many instances. About thirty years ago, when I commenced house-keeping, I had a garden about 200 feet long, which I planted according to the best of my judgment. Among other things I made several beds of Strawberries. In the month of May an old gentleman called upon me who was an amateur gardener, and famous for the cultivation of Strawberries. Looking at my young beds, his first words were, "Now you must go over these beds, take every plant up which does not show bloom, and throw them all away." Of course I reasoned with him that if they did not bloom that year they would next. "Not at all," said he. "Throw them away, you will have plenty of runners from your blooming plants which will give you fruit, the others never will." Well, I was a young man, and, what does not always occur, I took the advice of the old gentleman in part, and will now give you the result.

All the plants not showing bloom were carefully removed and replanted on each side of the middle walk, about 200 feet long. They were taken great care of, and grew to be splendid plants; but during three years I waited in vain for fruit—they never produced a tea-saucerful, and not one perfect berry.

To test the theory still further I took some of the runners, and found them entirely worthless. Of course I have followed this plan ever since, and have never failed to have a good crop. What I have said refers to Strawberries in the garden; but may not this account for the failure sometimes in pots? I should like some one to test it and report progress. For my own part, I am always careful to take runners for pots from fruit-bearing plants.

Another day, perhaps, if worth your notice, I may give you my little experience in this matter. If what I have written is considered worth a place in your Journal it may bring forth some information upon the subject.—W. Y.

[We shall be much obliged by your relating the results of your experience.]

THE UNITED HORTICULTURAL SOCIETY.—This new society held their first show on Tuesday, the 11th inst., in the Albion Hall, Moorgate Street, a building much too confined for the purpose, as there was barely sufficient room to move about between the tables. Elevated at the opposite end of the room to the entrance were Azaleas from Messrs. Lane, and Yuccas, &c., from Mr. Williams, who also contributed *Amaryllis*, *Pandanus reflexus* and elegantissimus, and *Hemerocallis Kwanzo flore pleno*. A numerous collection of Azaleas, which was shown on the previous Saturday at the Regent's Park, also came from Messrs. Lane. Mr. Turner, Slough, sent seedling Azalea Duke of Buccleuch, a deep rosy crimson of good substance, and Messrs. Paul and Son, pot Roses and boxes of cut blooms, including among others their new Hybrid Perpetual, Princess Mary of Cambridge, which appeared to much greater advantage on this occasion than at the Regent's Park, the colour being pale rose and pink in the centre. It is prettiest when half expanded. From Mr. Baker, gardener to A. Basset, Esq., Stamford Hill, came very good examples of *Odontoglossum Pescatorei*, *Phalenopsis Schilleriana*, and *Cypripedium pubescens*, with eight fine blossoms; whilst Mr. Wilson, gardener to W. Marshall, Esq., Enfield, sent *Phalenopsis grandiflora*, fine, a new *Epipedium* from New Grenada, with dusky chocolate flowers, and a white lip; *Dendrobium anthropophyllum* with a white, orange, and red flower;

Salvia Regia, and other plants. Mr. Rhodes, Sydenham Park Nursery, had well-bloomed plants of Heaths—*Hartnelli* major, *Profusa*, *Elegans*, and *Devoniana*; *Glendinning* and Sons, a nice specimen of *Erica Sindyana*, cut *Camellias*, and various Conifers for the decoration of the room; Mr. Aldred, Kilburn, *Anætochilus*, *Cinerarias*, *Cyclamens*, &c.; Mr. Fraser, Lea Bridge, *Boronia pinnata*, *Acacias*, *Sphærogyne latifolia*, and *Alocasias*; and Mr. Wheeler, gardener to J. Philpott, Esq., Stamford Hill, miscellaneous flowering and ornamental-foliaged plants, besides which *Hyacinths*, honey, and some other objects were exhibited. The whole formed a rather gay little show, which, however, was not numerously attended.

ROYAL HORTICULTURAL SOCIETY'S SHOW.

APRIL 15TH.

THOUGH the Azaleas were somewhat scanty, there was a magnificent display of Roses, both new and old, cut and in pots, whilst miscellaneous flowering and ornamental-foliaged plants, together with *Cinerarias*, were tolerably numerous. In Azaleas Mr. Todman, gardener to R. Hudson, Esq., Clapham, had a first prize for good plants of *Criterion*, *Triumphans*, *Eulalie* (Van Geert), *Coronata*, *The Bride*, white, *Princess Royal*, *Roi Leopold*, *Dr. Livingstone*, and *Princess Mathilde*; and a like award was made to him for a specimen plant of that richly-coloured variety *Duchesse Adelaide de Nassau*.

Roses, however, formed the principal feature of the Show. A single specimen of *President* (Tea), from Mr. W. Paul, was covered with some two dozen expanded blooms, each measuring 5 inches across. For this a first prize was awarded; and the same exhibitor was also first for a collection of nine, consisting of remarkably fine specimens of *Beauty of Waltham*, splendid colour; *Paul Ricaut*; *Charles Lawson*; *Victor Verdier*, magnificent; *Caline Forestier*; *Madame Villermoz*; *Souvenir d'un Ami*; and *Marquise de Foucault*. Messrs. Paul & Son were second, also with fine specimens, among which we remarked *Virginal*, a beautiful white; and *Madame Alfred de Rougemont*, another white Hybrid Perpetual, a section in which there exist too many scarlets and crimsons, comparatively with other colours; *President*; *Comtesse de Chabillant*, and *Victor Verdier*.

New Roses were also shown in numerous collections and in great beauty by both the above exhibitors. Mr. W. Paul taking first, and Messrs. Paul & Son second. Among them were *Madame Victor Verdier* and *Pierre Notting*, the former a very large, rich, bright cherry colour, and the latter a dark violet-shaded red, and both evidently of sterling merit. Among others we noticed *Princess of Lichtenstein*, a new white Hybrid Perpetual; and *Madame Emile Boyan*, a rosy flesh, or blush according to the age of the blooms, and which appears likely to form a good addition to the same class. *Princess of Wales* and *Duke of Wellington* were remarkable for their brilliant colour. Of other kinds the most noticeable were *Amiral La Peyrouse*, *Kate Hausburg*, *Maréchal Souchet*, *Souvenir de Bernardin de St. Pierre*, *Achille Gonod*, *Triomphe de la Terre des Roses*, and *Duchesse de Caylus*. *Princess Mary of Cambridge*, which has been noticed on previous occasions, was again shown by Messrs. Paul & Son, who also contributed several boxes of fine cut blooms of numerous varieties.

Cinerarias were not so fine as could have been expected. In addition to the kinds noticed as being the best at the Regent's Park we observed *Adam Bede*, rose self; *Eclipse*, broad rosy crimson edge, with white ring; and *Miss Eyles*, rose, with white ring round the disk. Mr. Lacey, gardener to C. Mortimer, Esq., Morden, was first; Mr. Marcham, Hanwell, second; and Mr. Cox, gardener to Capt. Cahill, Southall, third.

Auriculas and *Polyanthus* were shown by Mr. Butcher, Camberwell, who received a second prize for the former, and a third for the latter; and *Pansies*, both in pots and as cut blooms, by Mr. Hooper, Bath. These were seedlings of his own raising. Among them we remarked, *Alexander the Great*, a large white self, and *Delicate*, very pretty. Mr. Hooper received a first prize for his cut blooms.

Of miscellaneous plants, Messrs. Lee, Hammersmith, contributed *Camellias*, Azaleas, the highly ornamental *Acacia*

Drummondii; *Ixora Griffithi*, in fine bloom; *Dendrobium Dayanum*; *Hedera*, &c.; and Mr. Bull, Orange trees, Palms, and Ferns, among which were a fine mass of *Trichomanes radicans*, *Platynerium alcinorne*, and some good *Gleichenias*; *Camellias* Countess of Orkney and La Reine, both fine white varieties; *Araucaria gracilis*, with pendent shoots; *Dracenas*, &c. A first prize was awarded to Messrs. Lee a second to Mr. Bull.

Mr. Veitch again exhibited his fine new *Rhododendron* *Princess Alexandra*, *Azalea Stella*, the scarlet-spathed *Anthurium Scherzerianum*, and *Manettia micans*, with long orange scarlet flowers, for each of which he received a first-class certificate; also, *Primula cortusoides grandiflora*, with large, saucer-shaped, drooping flowers, rosy lilac outside, and paler within; and *Primula cortusoides cœrulea*, lilac rose flowers; a first class certificate was awarded to each of these. A white variety was also shown. From Messrs. Smith, of Dulwich, came *Azaleas*, including among others, *Etna*, a fine colour, salmon scarlet and dark crimson spots, a promising variety; *Cineraria Flower of the Day*, purplish plum, with a conspicuous ring of red at the base of the ray florets, surrounding a narrow white ring; from Mr. Cooling, Bath, *Verbena Annie*, of which a coloured plate was given in the "Florist and Pomologist" of February last; from Mr. W. Paul, Beaton's *Geraniums*; from Mr. Beadon, North Stoneham, cut blooms of *Camellias* grown in the open air; from Mr. Bartlett, Lily of the Valley and *Cyclamens*; and from the Society's garden at Chiswick a species of *Peperomia*, with ample foliage, having silvery markings. A few other objects were exhibited, but not of a nature to call for special mention.

INTERNATIONAL FRUIT SHOW.

THE challenge which has been given by the Royal Horticultural Society to the gardens of the Sovereigns of Europe, for a competitive exhibition of fruits and vegetables, to be held from the 9th to the 16th of December, has been favourably received by France, Russia, Italy, Turkey, Havover, Greece, Belgium, &c., and further answers are being daily received. The following prizes are offered:—

1. The gold medal of the Society will be awarded for the best collection of fruit and vegetables produced in the garden of a Sovereign.
2. The gold medal of the Society for the best collection of fruit and vegetables grown by any botanic or horticultural society in any part of the world.
3. The gold medal of the Society for the best and most complete representative collection of fruit and vegetables from any of the Colonies.
4. First Banksian gold medal for the best and most complete representative collection from the Presidencies of India.
5. Certificates will be awarded for separate exhibitions of fruits and vegetables, either fresh or preserved, from all parts of the world.
6. The first gold Knightian medal of the Society to the exhibitor who shall obtain the greatest number of first-class certificates.
7. The second gold Knightian medal to the exhibitor who shall obtain the greatest number of second-class certificates.
8. The second gold Banksian medal to the exhibitor who shall obtain the greatest number of third-class certificates.
9. The first gold Banksian medal to the exhibitor who shall gain the greatest number of marks, counting first, second, and third certificates as three, two, and one marks respectively.

LAVENDER DISEASE.

ONE of the greatest Lavender growers is anxious about the Lavender malady. Fine healthy plants will begin to die off in pieces, and sometimes altogether, and the stem below ground becomes dark in the centre. I enclose two or three pieces of the head from the same plant, dead and alive. The dead part seems rather floury with mildew, or something of that kind. I think if that is the case, a little powdered lime and charcoal would do good. I firmly believe that the great growers must just go back in their cultivation. For one load of dung used twenty or thirty years ago, I should say that twenty or thirty are used now, and the extreme luxuriance to secure heavy crops may be

the primary cause. The oil of Lavender made on the Continent is not worth a third of that made in this country. The plants in France, are, I believe, still healthy, and as I ascribe the difference in quality to the climate, I have a strong belief that foreign plants grown here would yield the properties of British-grown plants. It is a very serious affair for a man to lose ten or twenty acres of Lavender in full bearing. Can any of your readers give information on this subject?—R. FISH.

SIZE OF FLOWER-POTS—CINDERS FOR DRAINAGE.

MAY I suggest to your correspondents that, instead of calling flower-pots 48's, 24's, &c., according to the number in the cast, they should name them according to their size, as four-inch, six-inch, twelve-inch, &c.? Many of the readers of your Journal are not *au fait* in the different sizes of the pots in the casts, besides they vary very much in different parts of England; and as one of the great objects of your paper is to give assistance and easy rules for the guidance of the amateur and those who have not had much practice in gardening, I think every direction as to size of pots, &c., should be as plain as possible. I think every one understands that a six-inch pot is one which averages 6 inches across the top and 6 inches in height.

None of your correspondents have ever to my recollection recommended sifted cinders for the drainage of pots. Charcoal is, I know, often mentioned; but as a rule persons are apt to think that crocks, or broken bricks, tiles, &c., are the only legitimate drainage for pots. Now, for bedding-out plants I always use cinders passed through two riddles—a three-quarter-inch mesh to take out the large, and a half-inch to riddle out the small dust. A few cinders at the bottom of each pot are ample drainage for nearly all bedding-out plants; and when these are turned out to plant, the roots have generally clung to the cinders, which act as a sort of reservoir of moisture for them, and there is no necessity to injure the roots by picking off crocks, but the plants are put in, cinders and all. In large-sized pots a little moss on the top of the cinders is a good addition, in order to prevent the finer soil from washing too much into the drainage. I am rather an advocate for *Verbenas* and *Calceolarias* having nothing as drainage but a little moss. Many plants in April and May in small pots, especially *Calceolarias* and *Verbenas*, suffer more from over-drainage than under-drainage, especially where plants are on raised wooden stages. For large plants which require a good deal of feeding with liquid manure, cinders will be found invaluable, as they act like a sponge, keep the liquid manure in a sweet state, and the rootlets suck the moisture from them by degrees. A mulching of ashes on the top of the soil in the pots helps also very much to deodorise liquid manure.

Many persons think old plants of *Geraniums* flower earlier than spring-struck cuttings. This is contrary to my own experience. Autumn-struck cuttings are always with me the earliest in bloom; then come spring-struck, and old plants last of all. I am speaking, of course, of large old plants which have been cut down and have had to make fresh growth in the spring. Those which were only small plants in autumn and were not cut down or topped when they were taken up are, perhaps, as forward as autumn-struck cuttings; but for all bedding-out purposes no plants are so good as those that have been struck in the autumn, potted off early in January or February, and kept close to the glass till bedding-out time.—X. Y. Z.

MESSRS. F. & A. SMITH'S DOUBLE CHINESE PRIMROSES.—Having had these in bloom during the past winter (and indeed they are not yet over), I should like to say a word in their favour. They are really most desirable plants, being most profuse bloomers, and very enduring. *Fairy* is a most charming little thing, literally covered with bloom; while *Candidissima* is a pure white; but all are good—an opinion in which I am not singular, as it has been observed to me more than once by those who have largely to do with plants, How excellent they are for winter and spring decoration.—D., Deal.

CULTURE OF THE GOLDEN ARABIS.

(ARABIS LUCIDA VARIEGATA.)

I THINK it will be readily admitted that all the Arabises are pretty, and have long held the foremost rank for their hardiness and extreme elegance, but this one in particular from its invincible hardiness, alike in the most severe winter and hottest summer. If there is a time at which it looks better than at any other it is in the coldest weather. One great merit it possesses is the extreme facility with which it can be propagated. All you have to do is to prepare a bit of ground, cut down a little old turf, fork this in near the surface, then make your plants into single slips or pipings, place them 3 or 4 inches apart, and in doing this you will scarcely have a bit without a root. If there are any low glass frames at hand to put over the tops of the plants for the first fortnight or three weeks they will grow all the more rapidly.

When planting-out time arrives, which may be any time in the year (of course I do not approve of planting it in the dead of winter), in making ready for planting fork in a little fresh loam and rotten dung, then make your lines as level and straight as for a Box-edging. Never plant it low. After careful trial and experiment the best distance to plant is 10 inches apart and in single lines. Never allow the plants to touch each other by an inch, thus they maintain their natural habit of growth, which is perfectly round, and in height a good two-thirds of a ball. Replant once in two years, or as often as convenient; remove all the flowers as they make their appearance, and any bit that runs to green. By following these simple directions it will be in its full beauty the second year from the slip. Amongst all the bedding or ribbon-border plants it is one of the prettiest, the hardiest, requires the least care, and remains in full beauty all the year round.—T. S., *Mayfield, Falkirk.*

DEUTZIA CRENATA FLORE PLENO.

THIS beautiful, flowering, deciduous shrub from Japan promises to be as hardy as a Lilac, and seems likely to become more robust in habit than either *D. scabra* or *D. gracilis*, while the flowers are produced in great abundance on small plants. The habit of the plant, however, is more straggling than that of *D. gracilis*, and it is, therefore, not so well adapted for producing a nice compact object for pot culture, but this possibly may be overcome. As a plant to cover a wall it has, I should think, few equals, as the shoots ripen to the points, and mostly flower there. As a new plant it is one of the prettiest in its way we have had for some years, and I trust that it is the forerunner of others equally useful.—J. ROBSON.

COOL CULTURE OF ORCHIDS.

I WAS pleased to read the very sensible remarks of Mr. Findlay in the last week's Journal on the subject of cool Orchids. That growing Orchids on the cool system, as it is called, is a dangerous experiment there can be no doubt; as there are very many Orchids recommended for greenhouse cultivation which certainly do inhabit very high altitudes, but which, from the different circumstances by which they are surrounded, will, I am sure, refuse to grow well in this country in a greenhouse temperature. I can assure Mr. Findlay the very plants which he selected to experiment on should all be grown in a temperature of from 60° to 80°; but after the growth is fully matured he may gradually subject them to cool treatment until they begin to show flower, after which the temperature must be very gradually increased.

There are many of the choice *Odontoglossums* and other Orchids, which may be grown to advantage in a cooler temperature. There are innumerable Orchids found growing in different parts of the world in about the same mean temperature, but under such widely different circumstances that we might as well try to bring a Melon and a Cabbage to perfection under the same management. As a rule, I have found the Orchids which grow at high elevations in Japan and other situations require much cooler treatment

than those found at the same elevations under opposite circumstances.

In conclusion, I would just observe to those who are about to risk the lives of valuable Orchids in greenhouses, Be careful. No Orchids whatever will bear the draughty and damp temperature your miscellaneous greenhouse plants are subjected to. If you wish to cultivate to perfection what some people call greenhouse Orchids, you must have a house devoted to them, so that you can command a large amount of moisture when the plants require it, which most of them do in their growing season. I may add that the plants of all the most choice and newly imported *Odontoglossums* under my charge here are constantly standing in water, except perhaps when the temperature of the house is under the average, and the night is likely to prove cold.—ROBERT BULLEN, *Gardener, Bow Bridge House, Leicester.*

MANAGEMENT OF GARDEN IMPLEMENTS.

I WILL anticipate the conclusion our much-respected friend, Mr. F. Chitty, intended, when he commenced his able article on the above subject, by describing the system adopted by me for keeping the implements for garden use, clean and in their proper place; for it is, to quote the late Mr. Chitty's words, "of the utmost importance where neatness and expedition in performing the work of the garden is desired, that the workmen should be supplied with proper tools, and these in good condition; for however true it is that a good workman never finds fault with his tools, it is equally true that any workman whether good, bad, or indifferent, will perform his work better with a good tool than with a bad one."

These words, almost the last written by a thoroughly practical man, should be deeply engraven on the mind of every gardener, for what is there more disgraceful in a gentleman's garden than a disorderly and slovenly tool-shed? It is not only offensive to the eye, but is also a constant and never-ending source of expense to the employer, for tools carelessly thrown about and put away dirty soon become unfit for use, whereas if they are taken proper care of they will last double or treble the time. One of the first things a gardener should do on taking a new situation, should be to see what state the tool-shed is in, and if not in a proper state to have it put in thoroughly efficient order as speedily as possible. The next thing necessary to be done is to procure for each workman a set of tools, which should consist of a spade, rake, Dutch and draw hoes, and one of Parker's patent digging forks.

But when these are procured for each workman, unless there is some plan adopted to secure the proper management of the tools, they will be of little use; for where there is a set of slovenly workmen, as soon as the clock strikes the hour of 6 p.m., whether the job be finished or not, down goes the tool. It is too much trouble to clean it, and take it to its proper place. Perhaps on the following morning the workman may be sent to a different job, where he will not require the same tool he was using yesterday, so that he takes another tool out with him. Perhaps on the following day he may want the tool or tools he had left out in the wet two days ago; but he has, of course, forgotten where he left them. He knew there was such and such a tool. In vain he makes inquiry first of one man then of another, but all to no purpose, no one knows anything about the missing implement; meanwhile the master is impatiently waiting to show the man what he wants done. Half an hour or more is thus lost; the temper of the master is thereby impaired; sundry locks of hair on the head of the forgetful workman are displaced by the incessant trying to scratch back to his memory where he has left the missing tool, but all to no purpose. At the end of a week or so afterwards he may, perhaps, stumble over it on his way to some fresh job; the tool after lying in the wet and dirt all this time becomes rusty, there is no pleasure then in working with it; but when it is bright and clean the work is performed with greater speed, and done in a workman-like manner, and the cry often heard of, "Master, I want a fresh tool," becomes less frequent.

All this has often come under my notice, and to prevent the recurrence of such disagreeable scenes, and to check

such a wanton waste of my employer's property, I adopted the following plan:—Each workman was provided with a set of tools. They were all had new at once, so that it might be seen which took most care of his tools. Some men will work for months with a tool, doing it but little harm, whilst others will destroy it, or nearly so, in that time. Those who use their tools in such a way should have the difference pointed out to them, by referring to those men whose tools are used properly. This ought to cure them of their carelessness.

After the tool-shed had been properly cleaned, a fresh window, &c., put in, one side was formed into compartments or stalls to keep each man's tools separate. This was done by dividing the space into 2 feet 6 inches stalls, by strips of board 10 inches wide. Holdfasts were driven into the wall to nail the boards to, the strip of boards reaching from the floor above the shed to the bottom; another piece was placed along over the stalls on which the names of the men were written, beginning with the foreman, and ending with the vegetable boy.

A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.
2	2	2	2	2	2	2	2	2	2	2
1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0

The spade and fork were hung up against the boards at 0 0, and large nails were driven into the wall at 2, for hanging the rake on, other nails were driven in at 1 1, for the hoes. Other stalls were provided for miscellaneous implements, to which all the men have access. When the arrangements were all completed, and the tools all put in their proper places, a notice board was put up, on which were written in large letters the rules I intended should be observed. The notice was to the following effect:—

NOTICE.

All persons not bringing back tools and putting them in their place after using them, will be fined for every such offence one penny. They will also be subject to a further fine of one penny if the tools are brought back dirty.

By Order.

A slate was then hung up in the shed, and the foreman was requested to look over the tools every night after the workmen had gone home, and if any man's tools were missing or dirty, his name was to be put on the slate, which was hung in a conspicuous part of the shed, there to remain till the fine or fines were paid. Sometimes one man would be fined several times in a week, but it soon made them more careful. The fines were all entered in a book kept by the foreman for that purpose, and at the end of the year the money equally divided amongst the men, so that those who have paid but few fines receive the same share as those who have been fined a great number of times. This plan I have found to work well, there is a great saving in tools, and the consolation of having "a place for everything, and having everything in its place."—J. WILLS.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE March meeting of the Entomological Society was held on the 6th ult., the President, F. P. Pascoe, Esq., F.L.S., being in the chair. Amongst the donations received since the last meeting was a new volume of the "Linnæa Entomologica," vol. xv., the publication of which has been resumed.

The President announced that, as an inducement to the study of economic entomology, the Council had decided to offer two prizes of the value of five guineas each, to be awarded to the authors of memoirs of sufficient merit, and drawn up from personal observation on the anatomy, economy, or habits of any insect or group of insects especially serviceable or obnoxious to mankind. The memoirs should be illustrated by figures of the insects in their different states, and, if the species be noxious, must detail the results of actual experiment made for the prevention of their attacks, or the destruction of the insects themselves. The memoirs must be sent to the Secretary at No. 12, Bedford Row, London, with fictitious signatures or mottoes, on or before the 31st December, 1885, when they will be referred to a committee to decide upon their merits. Each must be

accompanied by a sealed letter endorsed with the fictitious signature or motto adopted by its author, and enclosing his real name and address. The prize memoirs shall be the property of and will be published by the Society.

Mr. F. Bond exhibited some remarkable Galls found in a large Willow tree near Cambridge, in which the puncture of the insect in the terminal buds of the twigs had resulted in a premature development of the leaves in close whorls, which had remained persistent after the fall of the other leaves, and which had assumed all the appearance and even the colours of a full-blown Rose—a peculiarity which, as it seems most probable, had been the real cause of the supposed mediæval miracle of the leafless Willow trees blooming at Christmas like Roses. Mr. Bond also exhibited two interesting varieties of the common Tortoiseshell and Clouded Yellow Butterflies (*Vanessa Urticeæ* and *Colias Edusa*), both having dusky blotches in the middle of the fore and hind wings on the upper surface. They had been taken in Suffolk.

Mr. T. W. Wood also exhibited a variety of the Purple Emperor Butterfly, *Apatura Iris*, wanting the ordinary white band on the upper side of the wings. He also exhibited a very rare and beautiful Moth of the genus *Callimorpha* from Brazil.

Professor Westwood called the attention of the meeting to a remarkable memoir just published by Dr. Schiodte, of Copenhagen, in which several new views had been introduced with reference to the principles regulating the primary distribution of Coleopterous insects, and in which he drew a parallel between the merits of Fabricius and Latreille, to the detriment of the latter, as Professor Westwood considered without due judgment; Fabricius having relied in his classification on a single set of characters, whilst Latreille with greater philosophic acumen had seen, that characters which in one group were of primary importance became of secondary value in other groups.

The President also opposed Schiodte's views, as tending to produce very unnatural results in the classification of the insects on which he had been labouring. The President also read a paper, in which he opposed the practice, now daily gaining ground, of overthrowing generic names where they possessed a similarity of sound with other generic names previously established, although differently spelt; and Professor Westwood even ventured to propose that where the same name had been used generically in two distinct classes of animals, or in plants and animals, it was unnecessary to alter it in either division. He also made some observations on the development and economy of the Dog Tick.

Mr. McLachlan read a memoir containing descriptions of all the genera and species of British Caddice Flies.

ON THE UTILISATION OF NIGHT SOIL APART FROM SEWAGE.

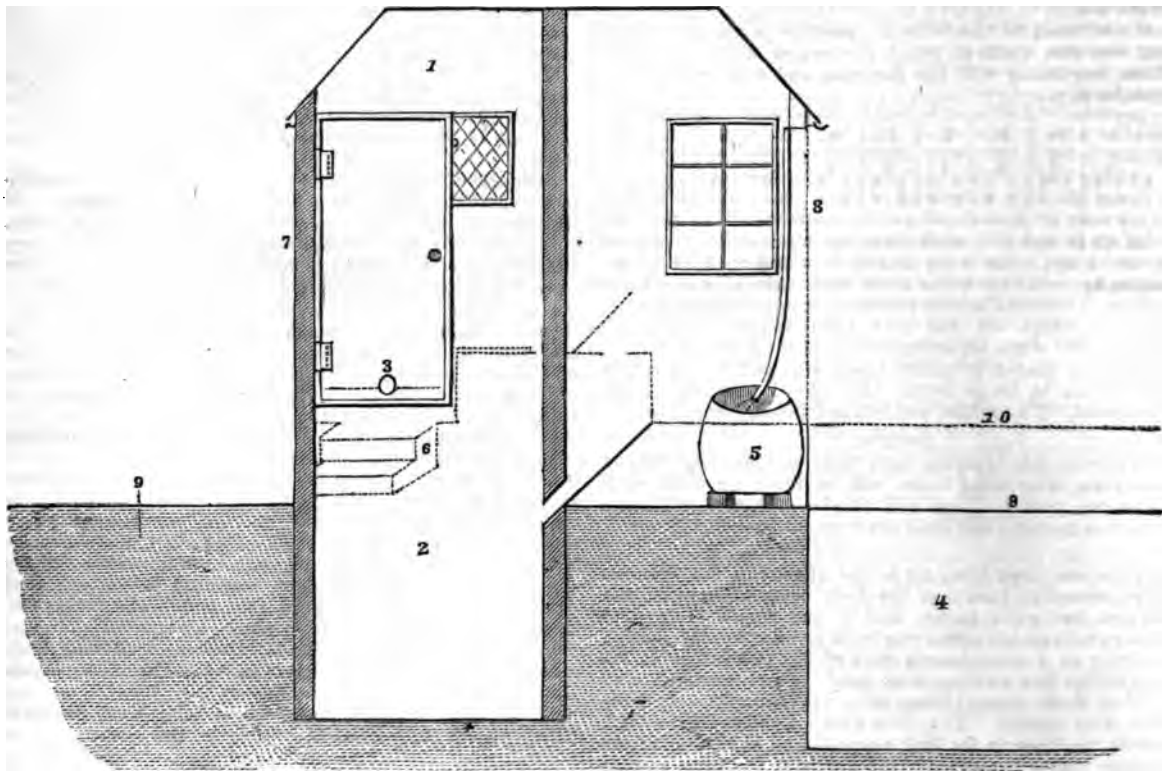
I HAVE been requested to state what I know of the subject set forth in the title of this paper. These words are part of the title of a very useful pamphlet written by E. Wilmot, Esq., J.P., and published by J. Masters & Son, London, at 1d. each, or 8d. per dozen, for distribution. I have long intended to write about the manure in a dry state, but the fear of that monition, "THE JOURNAL OF HORTICULTURE is accustomed to find a place on my drawing-room table," which smote upon a correspondence of our good bee-keeping friends, caused me to halt in my intention. To be sure I might have explained myself in a pamphlet, but I preferred the publicity afforded by the extensive circulation of this periodical. I trust, however, that my diction will not offend, and that I may be allowed to follow out the subject, for it is necessary that these matters should be discussed. Such being the case, I have too good an opinion of the common sense of my countrywomen to think that they will take offence at what conduces to household purity.

Mr. Wilmot prefaces his pamphlet with a letter from Mr. George Thompson, in which he states that a dozen inspectors of nuisances would not overcome the difficulty in Derby. In Woodstock, if I may judge from my own organs of smell, our inspector of nuisances must be in the habit of considering unsavoury odours in an inverse ratio to that which his office dictates. It would have made the pamphlet

more complete if Mr. Thompson had described the "tumbler flushing apparatus" he mentions.

We have had an "earth closet" in use here for some years, though till lately the contumely and prejudice one has had to contend against compelled me to attend to the earthing-over-and-disinfecting-process chiefly myself. I send you an outline descriptive of the structure as being what I consider a model to go upon, a proof that I most cordially agree in the justice of nearly the whole of Mr. Wilmot's remarks, and it cannot be repeated too often, that faecal matter exposed to air or water, gives off noxious and poisonous gases, which disturb the functions of the digestive and respiratory organs, and predispose to disease. Cottagers are not sufficiently well off to purchase disinfectants, and

even if they could, it is generally doubtful whether these compounds do not lessen the value of the natural manures; but simple dry earth, or burnt ashes, can be readily obtained for nothing, and they effectually fix the offensive and poisonous gases, preventing putrefactive fermentation, and absorbing the fertilising elements. Thus, so long as the compost is kept dry the original quality of the manure is maintained; but when it is applied to the land the ammoniacal products are set at liberty, in consequence of the rain, or the moisture of the ground, causing fermentation, and being then in a soluble state they are available as food for plants, which could not have availed themselves of the manure whilst dry. It must be dissolved in water, and it is far better to apply it to the roots of plants than to con-



Scale, a quarter of an inch to a foot.

- 1, The place, measuring 12 feet in length and 6 feet 6 inches in breadth, partitioned into two.
- 2, Watertight earth and faeces-pit, 6 feet deep and 4 feet 6 inches broad.
- 3, The trap-door in the floor of the lower compartment, 3 feet by 2 feet 6 inches, and the drop-ring by which it is raised.
- 4, Compost-pit, where the earth from the faeces-pit is mixed once a-year with other matters.
- 5, The tub which catches the water from the roof, and it is also made to act as a soot and lime-water barrel.
- 6, Steps ascending to the lower compartment from the back yard.
- 7, The north end and east side (blank walls) of the place are occupied with Morello Cherries.
- 8, Door entering the higher compartment from the garden terrace.
- 9, Ground-level in yard.
- 10, Ground-level of garden terrace.

A walk branches from the terrace to the doorway, 8; and nearly parallel with this is a stone wall separating the yard from the terrace. Beyond this wall an evergreen shrubbery forms an effectual screen.

taminate the air, or pollute the stream, and so force it through the lungs and into the stomachs of human beings. It is, perhaps, no exaggeration to say that more injury to health is inflicted on the humbler classes, and, in fact, mankind in general, through neglect of the above most necessary precautions, than by any other evil that can be mentioned. All agree that "something ought to be done," but it is of no use finding fault with everybody else for not doing it. The best plan for persons who can see and feel the necessity for action, is to set an example themselves. Ignorance or apathy must give way before such a public example.

In the hottest days of summer I scrape from the surface of the garden some wheelbarrow-loads of dusty soil, pass it through a sieve with a quarter of an inch mesh to exclude the stones, and store it in a disused corn-bin in the stable. An old chamber-pail, with a small hand-coal-scoop, is placed in the lower division of the place, and it is kept replenished with the dry earth ready for distribution.

As we bake at home in a wood oven, a large dredging-box containing wood ashes finds a constant station in the window-sill of the upper compartment, or McDougall's disinfecting powder is made to answer the purpose when the ash is in great request for the garden, or "running ley" for washing. I am no friend to cinders, they are cold hungry things in garden ground, but as we burn a quantity of wood in the grates, I have the mere ash from them sifted, and keep it perfectly dry in a lean-to shed. This dredged amongst growing crops in a dripping time when slugs are troublesome, or when seeds are germinating, is of great benefit. Occasionally the trap door in the lower compartment is lifted off and half a barrow-load or so administered over the entire surface below. It was only the other day that I caught my man applying water to the cinders before sifting them. I knew it was labour in vain for me to explain my chemical reasons for wishing him to act otherwise, so I solved the difficulty, by telling him I would have the powder kept dry. Clay would prove the best of all deodorisers, to

be applied to light soils, both as regards their fertility and texture; but it would require to be spread out and exposed to the action of a winter's frost, and to the scorching effects

of a summer's sun, to reduce it to the state of dry storable dust.—UPWARDS AND ONWARDS.

(To be continued.)

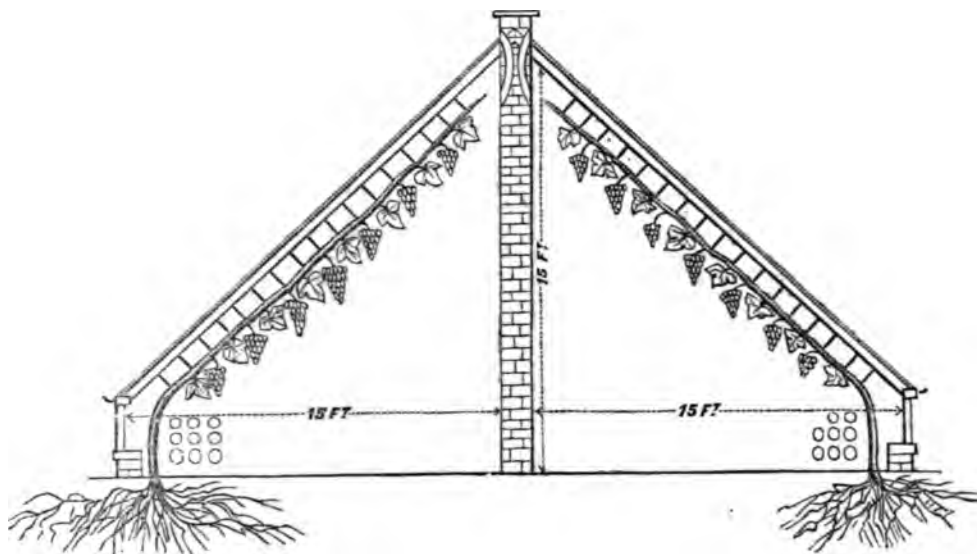
CONSTRUCTION OF A PINE STOVE.—No. 2.

BEFORE writing any more on the shapes and relative forcing powers of hothouses, I should like to say a few words on what I hope will be the tone of the discussion. I have said what sort of a house I am in want of, and have given you a plan. I have also invited a discussion; and should such arise, I hope it may induce you to add a manual on hothouse-building to the long and useful list published at your office.

We occasionally read in the papers devoted to horticulture accounts written *couleur de rose*; and those who bring these accounts down to a practical test are often charged with being discontented persons who cannot see any good in anything. I look upon horticulture from a plain business point of view, believing that it has not reached its culminating point, and that there can be no disadvantage in recognising facts. I am not proposing a manual of opinions; a house of a certain size and shape is a fact; put in it so many rows of pipes, and it must be possible to tell exactly what its powers are, as also if it is fitted for an early forcing-house or not. Early forcing both of fruit and flowers is becoming so common, and the difference between the re-

quirements of winter and summer-houses so great, that I am sure you would be doing good service to many if you would publish such a manual, as it would not only assist those who are intending to build, but also prevent those who have houses from trying what really is impossible. I will give you as an instance the span-roofed house I called in my last plan No. 2, and in which I said it would be impossible to keep up a temperature suitable for ripening Pines in winter. These span-roofed houses have been very fashionable of late for orchard-houses. Let us suppose we have one, and try and deduce from our authorities how many rows of pipes we should require to fit it for Pine-growing.

Mr. Thomson gives us in his valuable book on the Vine, at page 12, the shape of a house which he would recommend, and the number of pipes he thinks would be required to ripen Grapes in April—300 feet of four-inch pipes for a house made in the lean-to shape, 40 feet long and 15 feet wide, the back wall to be 15 feet high. He also recommends that it should have one of his steaming-trays, which he computes as equal to an additional row. I will therefore call the whole eight rows and a half of four-inch piping.



Plan No. 4.

Let us put one of these houses on each side of a wall, as I have shown in plan No. 4, we have thus a house 30 feet wide and 15 feet high, with seventeen rows of pipes. How many more must I add if I take out this centre wall that prevents the wind from blowing through it? and yet a writer told us the other day that eight rows of four-inch pipes were sufficient for a span-roofed house 26 feet wide and 12 feet high! Mr. Thomson says this number is required for his span-roofed houses for summer work, and I think they are not so wide as this. I seek to avoid such a trial in another shape, but know not where to turn to. All pipe heat that is not necessary is obnoxious as well as costly, and as glass and timber are cheaper than bricks and mortar, can we not make up for the loss of this back wall by increase of width and double glazing? This shelter from wind is the first consideration, light second, amount of atmosphere contained the third. I put light second, though this properly speaking includes the gain of heat from sunshine, as in winter it is small. In summer I grant it is the first consideration; but I am looking only to Pine culture, where there are no trellises to consider, and therefore it is included in the amount of atmosphere contained, which in winter

may easily cause great loss, but in summer the larger the more gain. For Pines we only want the largest number of square feet of pit room for the outlay. The square feet of trellis I will not enter upon.—G. H.

[Ever since we gave the description of Mr. Bewley's Fern-house we have lost no chance of advocating double-glazing. We have no doubt that with ventilation suitably attended to, it would be by far the most economical in the end for all houses in which much and regular heat is required. Few gentlemen, however, will as yet consent to let their gardeners go to such a first expense. For fruiting-Pine houses such double glazing would be invaluable; but if not done so securely as to prevent all vapour and dust getting between the two layers of glass, one part of the roof should be in sashes so as to permit of removal and cleaning. Failing this, in cold exposed parts of the country, where fuel is expensive, lean-to roofs will always be desirable, and if walls cost more than wood and glass they are also more lasting. Steep roofs, as shown in Mr. Thomson's early vinery, are also necessary for early forcing, to catch the rays of the sun in winter and early spring. In low-roofed houses, as in low spans, the rays are apt when the sun is low to pass over

the glass instead of going through it. The number of pipes given for a 15-feet-wide house by Mr. Thomson also seems large; but then he has no doubt found out that a first expense for piping was a gain in the end, and a constant saving of fuel, as with such piping it is never required that the water should become so hot as when a less number of feet of piping is used. Although we have not worked anything like that amount of piping ourselves, we have no hesitation in saying that for a hundred feet of piping less there would soon be a greater outlay for fuel, and in proportion to the extra heat given to the piping would be the greater unhealthiness of the enclosed atmosphere. For early forcing mere width will not compensate for a roof, on which the winter's sun exerts most power. We wish our correspondent every success in his attempt to reduce such matters to something like mathematical correctness and decision, but circumstances must ever alter cases.—R. F.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE regulating of Box and other plants used for edgings to the walks, and for dividing the different quarters of the kitchen garden, having been effected, the gravel-walks should either be turned over or a coat of fresh material added, having previously loosened the old surface. Let the whole be levelled and well rolled, repeating this, particularly after rain, till they become perfectly solid. In reforming them curve them slightly in the middle for rain to pass easily to the sides, but not more than this, unless in very wet situations. The walks being thus set right, and the edgings in proper order, an appearance of neatness and good keeping will pervade the whole. *Capiscums*, repot the plants of the larger varieties intended for turning out next month, harden them off when they have taken fresh roothold. The small sort, commonly called Chilies, should also be potted in rich soil as they require it, and be kept in a forcing or warm house. *Carrots*, the frames may be removed from the early sowing if required for other purposes; thin and water them as may appear necessary. *Celery*, some of the earliest sowing that has been pricked into boxes may now be planted in a frame; no artificial heat is required, but the light must remain if the weather become cold. Prick-out the successional sowings. *Cucumbers*, constant attention must be paid to stopping and giving air. Add fresh linings and fork them up frequently, which will preserve a moderate heat in the beds for some time, and will render a large quantity of fresh dung unnecessary at any one time. *Dwarf Kidney Beans*, make a sowing on a south border for the first crop. *Lettuce*, forward the spring-sown plants where there is a scarcity of the autumn-sown ones; water them in dry weather, and keep the soil about them loosened. *Peas*, earth-up and stick the advancing crops; before earthing use soot for the purposes we have before recommended. *Radishes*, make a sowing of the Turnip-rooted kinds; water those in frames when dry. *Rhubarb*, seed should now be sown to produce roots for forcing.

FRUIT GARDEN.

In the case of several of our cultivated fruit trees experience has abundantly proved that the removal at an early stage of their growth of shoots, which from the adoption of a system of training, or a tendency in the tree to excessive luxuriance, are deemed superfluous, is both advantageous to the health of the tree and favourable to the production of handsome fruit. Pruning may effect the result desired, but it is a violent remedy, although necessary in some degree. Disbudding, properly speaking, is the art of preventing the development of useless buds at the expense of those which should be preserved, as it must be more advantageous to check an unnecessary shoot at an early stage than to wait until it has exhausted the tree of a greater or less quantity of sap. It is, then, not generally advisable to wait until a badly-placed shoot is developed, but to suppress it early. With Apples and Pears peculiar judgment and discrimination are necessary, and stopping should be systematically practised. The excess of shoots produced by Peach trees invites the practice we recommended. The same attention should be directed to Vines.

FLOWER GARDEN.

Here too much unnecessary growth may be prevented. Roses, for example, if judiciously disbudded, not only bloom better, but form finer and more vigorous plants. Where the possessors of gardens can enjoy their country seats, during the months of March, April, and May, it becomes an important matter to provide abundance of very early spring flowers, for the floral appetite is generally of an active character after a long and severe winter. The early-flowering bulbs are too well known to need notice here. There are, however, a few old-fashioned plants which should never be lost sight of, and which should greet the returning spring from every nook and corner. Of such things are the following:—The blue and white Squills, the *Sisyrinchium*, the Dog's-tooth Violets, the *Pulmonarias*, the *Omphalodes verna*, the *Arabis* and *Aubrietias*, the various *Primulas*, with self *Auriculas*, and the lovely little *Sanguinaria canadensis*, not forgetting the old Christmas Rose, which forms, as it were, the connecting link between the expiring year and its successor. The *Colchicums*, autumn *Cyclamens*, and Winter Aconite have duly ushered it in. Such should be much more encouraged than they have been, for they must ever be favourites with the many. Among shrubs, too, the *Cornus mascula*, the *Mezereon*, the *Cydonia japonica*, the *Chimonanthus fragrans*, the *Ribes*, *Corchorus*, &c., should be much encouraged. Stocks, as a matter of course, will always be grown, and we recommend a trial of the *Chrysanthemum*-flowered Asters, which have bright and distinct colours for beds, with the advantage of having erect flowers. Do not forget to make one or two sowings of Sweet Peas, to keep up a succession of bloom.

GREENHOUSE AND CONSERVATORY.

Camellias making wood should have occasional shading; keep a moist atmosphere about them day and night, or they will grow gawky and long-jointed; a temperature of 55° at night and 65° by day should be maintained. Let all *Pelargoniums*, *Calceolarias*, *Cinerarias*, &c., be well staked out in due time, removing inferior plants, or those of a successive character, to any of the ordinary plant-structures. *Kalosanthes* will require neatly tying-out, as these plants form beautiful globular-shaped specimens by a little management. *Fuchsias* will require a second shift, which should now be into their blooming-pots, using a light rich soil for the purpose. The same will suit *Scarlet Geraniums* growing for specimens. At this busy season there is great danger of neglecting winter-blooming plants, such as *Epacris*, *Daphnes*, &c.; but if these are to be had in anything like perfection next season, they must be properly cared for now. Show-houses are generally kept too close and warm for *Epacris* and *Heaths*, and in that case they should be removed to the greenhouse as soon as they are out of flower, affording them a rather damp and shady situation for a few weeks. While drying winds and bright sunshine prevail, considerable attention will be necessary to maintain a moist healthy atmosphere in the conservatory, and no effort necessary to secure this should be spared; for it is hopeless to expect flowers to last in a dry warm atmosphere. A thin shade should be used to break the force of the sun, and in giving air every care should be taken to avoid drying currents, opening the top ventilators only, as long as these will suffice to prevent too high a temperature; and every available surface of bed or border should be kept constantly moist, in order to secure plenty of evaporation to counteract the drying effects of the external atmosphere.

STOVE.

Make cuttings of stove stock. Do not forget the old *Vincas*, the *Thunbergias*, *Plumbagos*, *Justicias*, &c. These, though old-fashioned, contribute much to the general effect. The *Orchids* are now progressing fast, and will require attention in shading daily, and gradually increasing the humidity of the house, so as to keep pace with the increase of solar light and heat. If the roof is covered with creepers, a little management in training them, to effect a judicious shading of the plants beneath, will save much trouble, and add much to the appearance of the house. See that plants on blocks, or suspended in baskets, are not allowed to get dry. Watch for and keep down insects. Plants in bloom should be removed to a house with a drier atmosphere, to prolong their period of flowering.

PITS AND FRAMES.

These will want not only daily but hourly attention; propagating, pricking-out, potting, hardening-off, with shading, syringing, &c., will be the order of the day.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

WHAT a week of July weather in the beginning of April! The notes of the birds in the early morning made us almost forget their depredations of the past. We could almost forgive the defying challenges of pheasants and partridges, as they rooted up and nipped the tops of Peas before we were out of bed; but telling us emphatically that we must rise with them, if we would interfere with their pilfering. They will do but little harm now, and to make amends we must sow a little thicker, even if we thin out afterwards. It is very different as respects sowing Peas and Beans late in autumn. What with birds and vermin of all kinds, there is little security for them unless protected with wire netting. This and the annoyance of hunting after slugs, &c., has made us altogether give up autumn sowing, and we sow instead under a little protection in spring, and then transplant. Those turned out of turves the other week are pricking up nicely in this splendid weather, looking as if they were grateful and pleased at the attention they received, and telling of their wish to yield us early gatherings as a reward for our care. The first out-door sowings are now up. Sowed another succession of Veitch's Perfection, Jeyes' Conqueror, or Ne Plus Ultra, and Harrison's Perfection. The last makes no show on the table for size like the first two, but it is a fine cropper, and a most delicious sweet little Pea. For general work see last week.

Sowed the main crop of Borecoles, Broccolis, Savoys, and will prick off some of those sown earlier, for the first crops. Watered Cauliflower that had been planted from hand-lights and cold frames, and gave also a fair watering to a quarter of Cabbages, as we were apprehensive that the hot, dry weather would cause the youngest or latest part at least to bolt, and show their flower-stems. Gave abundance of air or full exposure to Potatoes, Radishes, Lettuces, &c., under protection. Hoed among Lettuces out of doors, and gave a little water. Hoed among all growing crops, and also the Asparagus quarter, in order that all might be clean before the shoots appeared. Sowed Asparagus and Sea-kale, some of the latter in rows, to remain there, some thickly in a bed to be transplanted afterwards. Planted out Asparagus rather earlier than usual. The ground had been well trenched and enriched, and small drills were made 2 feet apart, and the plants spread out about 6 inches apart in the row, watered and covered over with the earth between the rows, thus making a little ridge. A little dung was thrown over the ridge, and some burnt clay and rubbish over all. For some seasons a light crop, as Lettuces, may be taken in summer between the rows. We rather like this mode better than beds, especially when taking up for forcing is concerned. A friend of ours has just been sowing some in rows where it is to stand, and as he has plenty of ground, we have no doubt the plants will answer admirably. The ground had been well stirred and enriched. It was then thrown into blunt ridges 4 feet apart. The ridge was then opened up, so as to form a shallow trench, and this was filled with rotten dung to a depth of at least 4 inches. A little soil was thrown on the dung, the seeds sown, and then a little more added as covering. The rows will thus be 4 feet apart. He wants it strong for forcing in four or five years, and we have no doubt the plan will succeed. The space in the hollows will be cropped slightly in summer.

FRUIT GARDEN.

Went on with nailing, and finishing pruning out of doors. Covered Peaches and Apricots thinly with laurel twigs. The orchard-houses are now a picture—the blossom strong and healthy, and no signs of an insect of any kind as yet. The fruit seems setting too quickly, helped, perhaps, rather much by the bees in search of pollen. In these scorching days we thought it advisable to just colour a little water with whitening, and syringe the outside of the glass with it,

which diminished a little the force of the sun's rays. Air has been given night and day in general, but in reduced quantity at night. Care was taken, however, to give all the air possible early in the morning, and then the houses, even with large squares of glass, never became unbearably hot in the day. The thermometer at night for the past week ranged from 40° to 45°, and onwards up to 85°, and even 90° during midday. Such heat does no harm when there is no condensed vapour, and the heat rises gradually. We have been privileged with several private notes of failures, the blossoms falling, shrivelled up, &c. In all these cases want of early air-giving was the cause. If in these bright mornings people do not think of looking to a house shut up the previous night until between eight and nine in the morning, they must take the consequences, especially with such trees as Peaches in bloom, and the house facing south or south-east. It would be much safer to leave air on all night. Better risk a little frost than a downright scorch. In the late vinery, now filled with Pelargoniums and bedding stuff, the Vines are breaking, and to keep them from becoming too forward, when we must keep them going, we threw a little whitened water over the roof, and in this fine weather gave air all night.

Took the most of the things out of the Fig-house or pit, and watered with manure water, intending to soak them well, not at once, but at three times, with a few days interval between. Observed the same plan with Peach trees against the wall in the orchard-house. Watered the ground about 2½ feet wide, then in about another week will do as much more, and so on. When such trees become dry in winter, and are soaked all at once, the buds and young fruit are apt to be thrown off. All such operations should tell gradually. Thinned Grapes in the earliest vinery. In such fine weather allowed the temperature to fall to about 60° at night, and after giving air at back early in the morning, gave no more air, if the heat from the sun did not rise above 85° or 90°. Of course, in such sunny days it would be mere waste to have sun heat and fire heat combined, so that the week of bright weather has been a good saving to the coal-heap. Regulated Strawberries now bearing nicely, and potted Melons, &c., for beds and pits. We would now notice three things.

1. *Insects*.—Like some other friends, our good instructor, Mr. Rivers, has rather read us wrong. We have old houses and old walls, but, on the whole, we are not so troubled with insects. We used about 1 oz. of tobacco for smoking some Cucumber plants on Tuesday night, the first smoking we have given for the season. We were but little troubled with the brown aphid last season, but we were not free from it entirely. We think prevention, if possible, is better than cure, and notwithstanding our care in this way, this aphid has appeared twice or thrice in our Peach-house this season. Of course, it was never allowed to multiply. But for chronicling our doings just as they happen, we might not have spoken of such a thing at all. We believe we are indebted to Mr. Rivers for the mention of quassia water. At any rate it is a clean remedy, even by itself, for this insect, and, perhaps, is more effectual. In fact, we believe it is, when boiled, as advised at page 287, with water and soft soap. But the insect is very easily destroyed; even the least touch with the fingers settles it. The mischief is, that if one or two escape your fingers and brush, you will have them like ropes of Onions in a few days, if you only let them alone. As yet they have troubled us but little, but we wanted to let others know to be on the look-out. Until about three years ago we never knew the pest, and we should have been glad if we had never seen it. As already stated, we look upon this brown aphid as king and governor, not because he is difficult to kill, but because the increase of generations is so rapid. The man who sees one will stand in his own light if he wait to see half a dozen.

As an evidence that we are not so troubled with insects, we may mention that nothing else except these few brown aphides have appeared in the above Peach-house, although, from shortly after the gathering of the fruit last season, it has been constantly in use for something, and a system of tier upon tier, and of filling and cramming has been resorted to, such as is seldom found in nurseries. Gardeners often bring much of this on themselves, but when once involved in it cannot easily get out of it. The house is a lean-to,

about 10½ feet wide. During winter the shelves, floor, and temporary stage beneath the trellis were filled with bedding plants. These were removed, and plants needing a little heat introduced, and now these are being removed to make way for others. At present, besides these temporary occupants, there are four rows of Strawberries the full length of the house, some ripening, others swelling, and some in bloom; and with all these varieties there has been no necessity for using even a puff of tobacco. The Cucumbers, the other night, and a few pots of Verbenas that had a little fly, are as yet the only plants, since last autumn, that have ever been smoked. Though this is the case, we are none the less obliged to Mr. Rivers, and to his mention again of the quassia water. We recommend it especially to ladies, for using to Roses, &c., with a brush with a longish handle, as it is so cleanly, and a little practice will prevent any dropping on their gloves or garments.

But for being behind with our work, we should have trespassing on Mr. Rivers to see his Apricots in pots, as with them we have as yet done little, and would like to have a fair start. As stated several times, we have no objection whatever to the pot system, except the watering, when water is scarce. We believe we are only beginning that system, and that the time will come when much smaller plants and pots will be used, in order that the plants in full bearing may stand in ornamental vases on the dining-table, when, of course, pots will be used to suit the vases. The taking such plants to the table with the pots mossed or tied round with ornamental paper, will ever be miserable attempts at refined taste.

2. *Birds*.—We have tried white worsted and black worsted, white, black, and red cotton, and, like windmills and guys, they all do good for a time; but then the birds soon become used to them. We have seen the roguish tom tit, and the impudent sparrow, if the thread was strong enough, sitting on it and swinging backwards and forwards in high glee, like a parrot on its swing perch. However, all these means, though not giving security with us, act as preventives, and notwithstanding all our outcry, if now let alone we will be pretty well for the small fruit. The Gooseberries are now so green as to be very nearly out of danger. Our opinion is, that we have had more benefit this season from syringing the bushes with a mixture of cowdung, soot, and lime, so as to make the buds unsavory. When that is mixed thin in a tub, and the operator puts on an old sack, or a mat tied round him, and uses the nozzle end of an old syringe, regulating the discharge with his hand, he will go over a great breadth in a short time. However, we advise all those who may abhor such work, to try the thread method, which will be effectual as a deterrent until the birds become used to it. Since the fine weather set in, the birds have troubled us but little. If they would be content with their share, anything and everything, and any mode of frightening them, are better than killing them, as no doubt they do us good, when they neither pilfer buds nor fruit, and there is something quite out of character in the report of guns amid the quiet that should be associated with the garden.

3. *Boilers and their Position*.—As coming in our way, we may state that boilers should be set quite free of the place to be heated by them, and so that they can be examined without interfering with the chimney that takes off the products of combustion. When houses, or a series of pits are to be heated, and the fire is intended to play not only on the inside but over the whole of the outside of the boiler, it is often deemed economical to thrust a part, if not the whole, of the boiler thus to be covered over inside of the houses or pits to be heated. It would often be truer economy to have such a boiler wholly outside, and so that the whole could be easily examined without interfering with the house, chimney, &c. We have a boiler so placed, fully one-half inside of a pit, the boiler heating three pits. About three years ago, after working some fifteen years, one of the sides—that farthest from the chimney, and next the flue—gave way. To reach it we were forced to open the flue outside, and also to sacrifice the crop in the first division of the pit, so as to get down to the boiler. We then, as we detailed, squeezed in an iron plate, which has stood ever since. Last week the other side gave way, the water pouring out about the centre of the side. This side we were anxious to reach

from the outside; but then there was the chimney at that side, and then a four-inch return-pipe stood right in our way. We could easily have reached it from the inside of the pit by removing earth, clinkers, and brickwork; but then we knew that our Cucumbers in bearing, and Vines in bloom, would be destroyed, or much injured. We therefore gave up the idea of plating the side of the boiler, as we could not reach it without breaking a hole inside; and as pulling out the boiler was not to be thought of, with so many tender things in the three pits depending on it, we merely cleaned out the flue on that side, damped it well, and filled it as high with wet bricks and Portland cement as went considerably above the leakage in the boiler. These bricks had to be shoved along and fastened and levelled with a long-handled spatula, the bricks and cement being squeezed up to the side of the boiler. As far as we recollect, we used about three courses of brick-on-bed. This still left a good portion of the side of the boiler exposed. As a temporary measure it has answered admirably, the rapid leakage being quite stopped, though of course the fire will not have quite the same effect on the outside of the boiler. We would have had little faith in the cement if the heated air passed below it, but it may stand a long time with the heated air passing above it. When the heat of summer comes, means must be used for setting a fresh boiler. The want of a boiler in such weather as we had a fortnight ago would have been ruinous, and any temporary tinkering to insure its working was an object to be aimed at. After emptying the boiler, all the bricking, &c., was done in a few hours. Our object in thus relating the misadventure is simply to state our conviction that, if the boiler had stood in the stoke-hole, and not mostly in the pit, we could have uncovered its side, and jammed against it a piece of plate-iron covered with red lead, in much less time, and we would have had more faith in the iron than in the bricks and cement. We could not get at the side without destroying the Cucumbers in the pit.

Though, as a matter of caution, and to show that something may be done in an extremity, we thus mention about this boiler, we do not wish it to be inferred that we are always in trouble about boilers. In a quarter of a century we have certainly replaced one, and we have tinkered this pit one, which should be replaced this summer. There are old boilers here, old when they came under our care, and likely to continue in working order, as far as we can judge, so that however old-fashioned they are, they so far answer the purpose. Such misadventures as the above, too, whilst they do nothing to disprove the economy of the large single-boiler theory, show the importance of having another boiler to act in a case of emergency. Imagine a single boiler that alone heats some dozen forcing-houses and plant-houses, giving way in such weather as we had in 1860 and 1861! We may also mention, that without any great leaning to the material of boilers, most of the failures we have met with and known, took place with wrought-iron boilers.

ORNAMENTAL DEPARTMENT.

Much the same as last week, cutting edges, rolling, digging, pruning, and potting, inserting cuttings, and turning out great quantities of bedding plants into temporary beds, where they can be protected until after the middle of May. On nothing as yet have we discovered an insect. The word protected, above noticed, must be kept in mind, for we cannot expect this weather to last, and there may yet be cold winds and sharp frosts before the 20th of May. Some are already complaining that their plants have been much injured by the strong sun; but all sudden changes must be avoided or neutralised. Plants are just like children, they seem to know and show gratitude to those who love them, and enter into all their little wants and wishes. There may be the strictest attention and duty so called, but these will never insure the growths and results of kind affectionate interest.—R. F.

TRADE CATALOGUES RECEIVED.

J. Scott, Merriott Nurseries, Crewkerne, Somersetshire.—*Descriptive Catalogue of Bedding Plants.*

Butler & McCulloch, Covent Garden Market, London.—*Price List of Agricultural Seeds.* March, 1865.

COVENT GARDEN MARKET.—APRIL 15.

In consequence of the change in the weather during the past week, the market is more plentifully supplied, and prices have become proportionably lower.

FRUIT.							
	s.	d.	s.		s.	d.	s.
Apples.....	2	0	4	Oranges.....	100	6	0 to 14
Apricots.....	0	0	0	Pears (kitchen).....	bush.	8	0 12 0
Chestnuts.....	14	0	20	dessert.....	dox.	3	0 10 0
Filberts.....	100	lb.	50	Pine Apples.....	lb.	10	0 14 6
Cobs.....	50	0	60	Plums.....	½ sieve	0	0 0 0
Grapes.....	15	0	30	Strawberries.....	dox.	1	0 2 0
Lemons.....	100	0	10	Walnuts.....	bush.	14	0 20 0
VEGETABLES.							
	s.	d.	s.		s.	d.	s.
Artichokes.....	each	0	4 to 0 6	Leeks.....	bunch	0	3 to 0 6
Asparagus.....	bundle	6	0 10 0	Lettuce.....	dox.	2	0 4 0
Beans Broad.....	½ sieve	0	0 0 0	Mushrooms.....	pottle	1	6 2 6
Kidney.....	100	1	6 2 0	Must. & Cress punnet	0	2	0 0
Beet, Red.....	dox.	2	0 3 0	Onions.....	bushel	5	0 7 0
Broccoli.....	bundle	0	0 0 0	Pickling.....	quart	6	0 8 0
Brussels Sprouts ½ sieve	3	0	4 0	Parley.....	½ sieve	2	6 4 0
Cabbages.....	dox.	1	6 2 0	Parsnips.....	dox.	0	9 1 0
Caulicourms.....	100	0	0 0 0	Peas.....	quart	10	0 15 0
Carrots.....	bunch	0	7 0 10	Potatoes.....	bushel	2	6 4 0
Chicory.....	dox.	2	0 6 0	Radishes doz.	bunches	0	9 2 0
Celery.....	bundle	3	0 3 0	Rhubarb.....	dox.	0	8 1 0
Cucumbers.....	each	0	6 3 6	Savoy.....	dox.	2	0 3 0
Endive.....	score	2	6 3 0	Sea-kale.....	basket	1	6 3 0
Fennel.....	bunch	0	3 0 0	Spinach.....	½ sieve	4	0 6 0
Herb and Shallots, lb.	0	8	0 0	Tomatoes.....	½ sieve	0	0 0 0
Horbe.....	bunch	0	3 0 0	Turnips.....	bunch	0	5 0 8
Horseradish.....	bundle	2	6 4 0	Vegetable Marrows doz.	0	0	0 0

TO CORRESPONDENTS.

* We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

Ve also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

* B.—Many questions must remain unanswered until next week.

Books (*John Barker*).—The "Rose Garden." by Mr. William Paul. You can obtain it from our office. (*T. Mitchell*).—"How to Farm Two Acres," by Mr. Robson.

Clipping Box-Edging (*E. D. Bangor*).—The recommendation to cut the box-edging in June was quite correct. The cause of the leaves becoming brown was most probably the long-continued dry weather, and perhaps, also, the exhaustion of the soil. Clipping should be done in moist weather, as browned portions may be removed now, or, if necessary, the edging tipped.

DOUBLE CHINESE PRIMULAS (*A Subscriber*).—They are obtained from seed, the single varieties sport in double varieties. Seed of double Primulas cannot be purchased, and you cannot obtain them from seed except by accident.

TREATMENT OF VINES BREAKING (*A Subscriber*).—The Vines now breaking could be sprinkled twice daily with albed water, and be allowed to come on naturally with sun heat, employing no fire except on frosty nights. The action of the bunches going off into tendrils is probably due to the roots lying in a badly-drained border, and situated at a great depth, where they are deprived of air, and form few fibres; the result is long gross wood, which is hardly possible to ripen properly. By keeping the house warmer than usual you will only increase the evil, by causing the leaves to demand more heat than the roots in a cold outside border are calculated to supply. You will do well to reserve the warmth for ripening the wood in autumn, to which heat being likely to cause the production of tendrils bunches, or bunches of fruit formed in embryo in the previous autumn.

DESTROYING CHICKWEED (*H. B.*).—The best way to destroy it is never to sow it to seed, hand-weeding, or cutting it up before it seeds. It will then appear, or cause but little trouble, though the ground will always be able to it. Covering with fresh soil would be a means of keeping it under, as the old soil must be covered so deeply as not to be brought to the surface.

STRIPPING PEACH AND NECTARINE TREES (*A. P.*).—Early in the morning if the weather is mild, and again at three or four o'clock in the afternoon. This had better not be done till after the fruit is set. Tobacco water could be used once a week to keep down green fly. The Thames water would be the better of standing a few hours in tubs or cisterns.

STRIPPING CAMELLIAS AND AZALEAS (*Idem*).—Sprinkle twice a day before and after they flower, but neither should be sprayed whilst they are in flower. Morning and evening are the best times, but they should be sprayed early in the morning in order that the foliage may be dry before the sun comes out very strong on them, to prevent burning. Tan will not prove heat enough for Cucumbers and Melons. Stable manure is much better.

COVERING A CHIMNEY (*H. S. C.*).—Procure a packet of mixed Tropæolum and sow at once at the base of the chimney in good soil.

GARDENER'S HAVING TO FIND CANDLES (*A Foreman*).—The allowing of candles for a bothie, and for looking after fires, is merely a matter of private arrangement. Candles, or a trifle instead, are very often allowed for the latter purpose, as no houses can be well attended to in winter without lights to see the thermometers and stove-holes, and also feel the heating medium, which is of more importance than looking at a glass. 19s., however, seems a deal of candle to be used for such a purpose in a winter. We should have been glad if, having received the concurrence of the head gardener, the gentleman had seen proper to make you some allowance. It is impossible to establish anything like a rule in such matters. We can only say, in conclusion, that if all the facts are as stated, we think that some allowance should have been made to you, unless there was any understanding to the contrary, but that it is best when such matters are stated in the engagement, and when all such allowances are merged in wages. You cannot, however, demand anything of the sort; and our earnest advice to you is that, so long as you continue in the situation, you will not abate in the least your anxious attention to all under your charge.

TWELVE VERBENAS FOR EXHIBITION (*J. Choyce*).—Brilliant de Vaise, scarlet shaded; Falrest of the Fair, white, purple eye; Foxhunter, scarlet; L'Avenir de Fallent, pink, rich crimson centre; La Grande Boule de Neige, white; Magnificens, large rosy lilac; Faust, rose scarlet; Peep o' Day, rosy salmon; Ruby Ring, bright ruby; Warrior, rosy pink; Zampa, purple; Blue Beard, blue.

SMALL DWARF DAHLIAS (*A Subscriber*).—For a border 3½ feet wide you could either have one row of dwarf Dahlias with an edging, or two rows without an edging, or a small one. The plants should be about 18 inches apart. The following are good kinds:—Zelinda, purple; ditto, yellow; Tom Thumb, maroon; Titian, yellow; Snowflake, white; Alba Multiflora, white; Prince Arthur, bright crimson; Dwarf Queen, purple, white tipped, and many more. A row of purple, and then a row of white, would look well, and so would purple and yellow. These are from 18 to 24 inches in height.

PEACH BLOOMS FALLING OFF (*An Old Subscriber*).—The Peach trees very likely suffered from one of two extremes—perhaps they had not sufficient water before they commenced swelling their buds, or they may have had too much; but the back wall of a vinery is a very bad place for a Peach tree. If the south front of the vinery is covered with Vines, it would be impossible for the Peach trees to obtain sufficient sun and air for ripening their wood; and even if they did the variations of temperature required for the successful cultivation of the Peach would be death to the Vine. If they were both started into growth at the same time, perhaps at the time the Vine would require a temperature of 75° or 80°, the crop of Peaches would be sacrificed if the trees were subjected to a higher temperature than 55°. Want of attention to the fertilising of the blooms is no doubt the cause of the blooms dropping off in many cases; but we do not consider this to be the cause of your trees shedding their blooms. The best plan, we find, to disperse the pollen, is to have a piece of thin board, and well fan the trees with it several times daily when they are in bloom. This should be done, if possible, while the sun is shining. There should be as much air as possible at the time of the operation. We seldom find any difficulty in setting the fruit well in this way, providing the wood has been well ripened during the previous summer.

SUMMER PRUNING APPLES, PEARS, &c. (*J. Parker*).—The best time to perform this operation is about mid-summer. The branches should not be cut short, only just the points nipped out, but shoots that it will not be required may be cut clean out; if you desire to have the trees covered with short fruiting spurs, the tops should be nipped out three or four times during the summer, commencing as soon as the shoots are 3 or 4 inches long. For Gooseberries or Currants the branches should be cut clean out from the centre of the bushes, so that the air may pass freely through them. The shoots left on them should be cut back to about 15 inches or 2 feet.

FIGS DROPPING PREMATURELY (*B. B.*).—The most likely cause of the fruit falling or turning yellow is the extreme variability of the temperature which you maintain. 90° is a high temperature, though even that would do no harm if it were chiefly from sun heat, and were accompanied by abundant ventilation. We think that the trees have been brought on too quickly, and that the temperature has been too high one day and too low the next—in short not regular enough, and not only too hot at times, but also very moist. Stopping the shoots under these circumstances would not prevent the fruit falling, though the points should be pinched out above the fifth leaf. Perhaps the soil has not been kept regularly moist, it being a very nice point to water Figs. They must be well and regularly supplied with water. If the trees were fresh potted that would tend to make the fruit fall, and watering with cold water is a frequent cause of the fruit falling prematurely. If the roof is too much shaded by the Vines then the wood would not be sufficiently ripened in the previous year, and that too would cause the young fruit to fall. Though these are some of the probable causes of the fruit falling, we are not sure that any of them apply to your case, the Fig being liable to cast its fruit, to a certain extent, under the best known treatment. The Figs not fallen or not turned yellow will, in all probability, ripen off and be very fine, as we have usually found them on trees exceedingly vigorous, the second crop being both abundant and excellent. Keep well supplied with water, and we think you will have a good second crop.

CULTURE OF CAMELLIA-FLOWERED BALSAMS (*C. W. W.*).—Smith's are the best; procure the seed at once, sow it in a gentle hotbed. As soon as the plants are up prick them off into small pots. Keep them as near the glass as possible; as soon as they have well filled the pots with roots give them a shift into 48 or 32-sized pots. As the plants gain strength give them as much air as possible, and as soon as they have well-filled their pots with roots, go on shifting them into still larger pots until you get them into No. 1-sized pots. They must have as much light and air as possible, and be kept free from green fly, and all the blooms should be picked out as they appear, until they have their final shift. A good strong loam and well-decomposed cow manure is best for them. After they have had their final shift and the pots are well-filled with roots, give them copious waterings with liquid manure three or four times a week. You cannot over-feed them after they have had their final shift.

MULBERRY TREE IN POT (*A Clerical Subscriber*).—Treat it the same as you would a Fig, by pinching at every fourth or fifth joint. It must not have too much pot room, otherwise it will soon grow too large for your greenhouse. If you treat it in this way it will require but little winter pruning.

FLOWER-GARDEN PLANTING (B. F.).—We think your planting will do very well, except that the *Roses* will not stand like the others; and the whole would have told better if you had had a centre clump. (F. L.).—Send the plan of your garden, with the arrangement which you propose, and we will comment upon it.

BEST CUCUMBER FOR OPEN GROUND (R. M.).—Henderson's A. L. Ridge Cucumber.

NAME OF FRUIT (R. A. K. P.).—Easter Beurré.

NAMES OF PLANTS (C. P.).—*Bartramia pomiformis*. (A. Subscriber).—1. *Didymodon heteromallum* (?); 2. *D. purpureum*; 3. *Juncus acuminatus*; 4. *Dicranum scoparium*; 5. *Trichostemum aciculare*; 6. *Hymen cupressiforme*; 7. *H. striatum*; 8. *Dicranum scoparium*; 9. *Hypnum reticulatum* (?); 10. *Gymnostomum pyriforme*; 11. *Marchantia* sp.; 12. *Hypnum splendens*. (C. P.).—*Asplenium cicutarium*. (F. D., *Perthshire*).—*Lastræ decomposita*. Clip down the Fern with a pair of scissors.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending April 15th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun. 9	30.196	30.192	74	30	50	46½	S.W.	.00	Slight fog; fine; hot and dry; fine; cool at night. [frost.]
Mon. 10	30.238	31.219	75	29	50	47	S.W.	.00	Very fine; hot sun; very fine; exceedingly fine; cool; slight
Tues. 11	30.225	30.116	72	31	50½	48	E.	.00	Very fine; hot and dry, with easterly wind; cold at night.
Wed. 12	30.051	29.947	66	35	51	48	E.	.00	Hazy; dry haze; hot and dry, easterly wind; very fine
Thurs. 13	29.923	29.914	69	35	51	48	S.W.	.00	Very fine throughout. [throughout.]
Fri. 14	29.972	29.913	62	42	51	48	S.W.	.09	Fine; overcast; rain; overcast.
Sat. 15	30.149	30.101	57	34	51	48	N.E.	.00	Densely overcast; cloudy; fine at night.
Mean	30.107	30.037	67.85	33.71	50.64	47.64	.....	.09	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

APPOINTMENT OF POULTRY CLUB JUDGES.

"LOOKER-ON" in his letter of March 7th says that there is an exhibitor, an extensive dealer, who, according to his own advertisement, has taken 537 prizes, including eleven silver cups, since January, 1864. "I am not the only one," says "LOOKER-ON," "who has made remarks about the success which appears to cling to members of the Club when their own judges are officiating." Now the inference, as I take it, which "LOOKER-ON" wishes your readers to draw from this is, that these prizes have been influenced through my being a steward of the Poultry Club. For "LOOKER-ON's" information allow me to say that the number of prizes I have taken under the nominees of the Club since the commencement of my stewardship does not exceed twenty. I leave your readers to draw their own conclusions from the two statements. "LOOKER-ON" objects to my holding the office of steward on account, as he says, of my being a dealer. That I sell a large quantity of poultry I will not attempt to deny, but I am no more a dealer than any other exhibitor who advertises his birds through the columns of your Journal. I have a business independent of this, which so far has been found sufficient for my wants; but exhibiting and keeping poultry is a hobby in which I take a great delight, and I endeavour to make them pay as well as possible, and I have yet to learn that there is anything wrong in this. "LOOKER-ON" thinks if I do not resign my office ill-natured persons will say that the reason I am so successful is because I am one of those who appoint the judges. Well, if ill-natured persons only say this I shall not much care if I can only retain the good opinion of the good-natured and the just. "LOOKER-ON" must excuse me if I decline to act upon his advice. By the unanimous vote of the members of the Club at their annual meeting I was elected a steward, and I think should ill-requite the confidence they have placed in me were I to resign office.

With respect to the exclusion of dealers as judges, I had nothing to do with framing that rule. I would exclude no class provided they were men of ability and undoubted integrity, and I doubt not there are many such amongst dealers. I have the rules of the Club now before me, and can find no exclusion rule—it appears to have been rescinded. I feel rather astonished at "LOOKER-ON's" objection to my showing in Miss E. Beldon's name: what harm does it do him or any one? Even "LOOKER-ON" is at a loss to understand for what object I do it, still he thinks it an additional reason for my resigning office. He must show me some better reason before I act upon his advice. The ridiculous practice, as he calls it, I shall retain so long as it pleases me, and Miss E. Beldon. "LOOKER-ON" by his own statement appears to have been an unsuccessful man in the exhibiting line, and seems to have no sympathy with one who happens to have been more successful than himself.—H. BRYDON.

THE BATH AND WEST OF ENGLAND POULTRY SHOW SCHEDULE.

It is not pleasant to have to find fault when one meets with such a liberal prize list as this; but I must say one word about the Bantam prizes. What can the Committee be thinking about to offer first and second prizes for Gold-laced Bantams, for Silver-laced Bantams, and for Black and White Bantams, and leave the favourite Game Bantam to compete in the Any other variety class?

Can the Committee be ignorant of the fact, that at Birmingham no less than one hundred pens of Game Bantams, not counting single cocks, were entered, and that the entries of Gold and Silver Sebrights, and Black and White Bantams together, only mustered fifty—less than half? But that is not the worst aspect of the case; in the Any other variety of Bantam class at Birmingham there were fifteen entries, so that, in point of fact, only £3 is offered for prizes for birds, of which one hundred and sixteen pens were entered at Birmingham, whilst £9 is offered for birds which there mustered only fifty pens, the proportion being roughly six to one in favour of the latter.

I mention Birmingham because I happen to have the prize list by me; but I am greatly mistaken if the Game Bantam has not been exhibited for some time past at all our leading shows in far greater numbers than Gold or Silver Sebrights, or Black or White birds.—P.

DISTINCT VARIETIES OF PIGEONS.

I WANTED to see if some abler hand than myself would raise a voice in opposition (friendly, of course!) to Mr. Brent's pronounced opinion that all the various and distinctly characterised sorts of Pigeons are descended from the common Blue Rock. One would have thought that the personal experience of a breeder would have compelled a man to abandon such a theory, even if he began with a strong bias in its favour.

In the first place, who can we suppose took the trouble to single out those "sporting" birds and convert their peculiarities into distinct and established breeds? That there are certain breeds which pass among us, in these days, as distinct varieties, which are not truly so, every breeder of Pigeons and poultry knows full well, and every amateur beginner discovers to his cost, when he finds that in order to keep his stock from throwing back, he is compelled to resort to certain quasi-dishonest crosses. And this goes far, I think, to disprove the Blue Rock theory, for if it could ever be done it could still be done, the "sports" would still exist; and did any one ever see a Blue Rock with such peculiarities that by all the care and breeding in the world he could possibly convert its progeny into a White Fantail, Carrier, or any other sort? I consider it would be very much the same thing to say that all the "Finches," Goldfinch, "Bully," and all, are derived from one member of the tribe of plain and sombre garb. But then who singled out and kept distinct

the original "sports?" Ah! who? Why I believe that the same Almighty hand that created these beautiful little songsters, created our beautiful varieties of Pigeons in the forms in which we have them, except such as we know to be spurious crosses.

We know there are many (but a minority), who hold Mr. Brent's theory; but, then, they also think that the huge bloodhound and the Blenheim spaniel are from a common stock. Indeed, I am as little disposed to believe all this, as I am to believe that we are only "improved" monkeys, and that we have rubbed off our tails by sitting on them till nature declines to take the trouble to grow them.—W. H. B.

AN EGG WITHIN AN EGG.

I was induced to address you a few months ago about a black hen which had become white, your remark being that such changes were by no means unfrequent among Spanish fowls. My bird, however, is not of Spanish blood, but of a mongrel class, of which I would there were fewer.

I am now anxious to make known another curious fact which has occurred in another farmer's poultry-yard. A Goose has just laid an egg of the remarkable dimensions of 10½ inches in circumference and 5 inches in length. The egg was kindly brought to me, and I found the outer shell (which had been broken with a view to domestic purposes) contained within it another hard-shelled egg, each egg having a perfect yolk. Together they must have weighed above 1 lb., as I found that the inner one weighed rather more than 8 ozs. The doer of this strange deed is a venerable bird of seventeen years, is a regular layer, and, I may mention as an amiable trait in her domestic life that, after five of her eggs had on one occasion been hatched under a hen, she readily adopted the young brood, and brought them up.—R. O., Eglingham.

COMMENCING BEE-KEEPING—MAKING ARTIFICIAL SWARMS.

I AM about commencing bee-keeping, and I do so more particularly with the intention of introducing the humane and depriving system among my neighbours. This is a bee country, but, save a solitary glass filled in the gardens of the gentry, the sulphur-pit is the order of the day. I have a Woodbury straw frame-hive, which I hope to experimentalise with, as much to show my neighbours what may and can be done as with any object advantageous to myself. Being practically ignorant I must seek for advice, and I write for information on two points—first, in making artificial swarms with the frame-hive how far must you remove the old hive with the brood in (who are to rear a queen) from its original place? and if only a few yards, will not all the bees forsake the frame hive and return to the queen and the all-but-empty hive? Is any particular management required?

The next point is this—in order to introduce the humane system I mean to drive the bees from the stalls that are to be taken far and near all round my neighbourhood, take them home, unite them or not as may be required, feed them, and for half the expense see if I cannot obtain good swarms for the ensuing spring. As this plan became known the owners would look twice before they gave their bees away, and I should find that it would be adopted by all as a matter to their own advantage; and thus I should attain the object I had in view, the abolition of the brimstone-pit.—M. D.

[In making artificial swarms it is certainly well to remove the old hive to as great a distance as may be convenient, in order to guard against its being deserted too completely. This evil may, however, be in some measure obviated by confining the bees* for four-and-twenty hours after their removal, during which period their excitement will abate, royal cells will be started, and the permanent population will be increased by the hatching of perhaps some hundreds of young bees. When forming stocks with condemned bees in autumn it is necessary to unite several in order to insure a sufficient population to build combs freely. The experiment is unquestionably very interesting, but we have found in practice that, setting aside the risk of failure, stocks

* Ample ventilation must of course be afforded them during their imprisonment.

formed in this way cost just as much as purchased swarms. The best mode of utilising condemned bees in autumn is to employ them in strengthening other stocks which are intended to stand the winter. We shall be glad to be informed of the result of your operations.]

BEEES NOT WORKING IN GLASSES—RAISING A SUPER.

CAN you tell me why my bees will not work in glasses? These are of all shapes, and generally quite wet inside.

I have a good stock, with a straw super full of comb. Should I allow the bees to fill the super with honey first, or place a box between the stock and super at once? Is it of any use giving them extra room when once they cluster outside the mouth of the hive? or must I either drive them or let them swarm?—DUMPLING.

[It is not always easy to induce bees to work in glasses, but this reluctance may generally be overcome by furnishing them beforehand with some clean worker-comb. Moisture from the heated air of the hive is always liable to condense in the interior of glasses used as supers. If your straw super be of full size, it may not be advisable to raise it on a box; at any rate you should let the bees take possession of it, and pretty well fill it with honey before doing so. Mere clustering at the mouth of the hive is by no means decisive as to the fact of its being too late to afford bees additional room.]

BEE-BROOD DYING.

THE piece of honeycomb which I left at your office is a fair specimen of the condition of a hive which I lately found to contain no live bees. It was very strong in the autumn, and even on March 16th, when I found the bees dead, there were perhaps 3 lbs. or 4 lbs. of honey left, but very dark in colour. Some of the bees were not dead, but in a kind of stupor, from which they did not recover. A great number lay on the floor-board quite dead, and they, as well as the whole of the hive, were of a very dark colour. From the above data can you inform me the cause of death, whether disease, or only a common case of failure? I am not quite sure, but believe the bees had occupied the same hive for at least three years.—SMITH.

[The comb which accompanied your letter contained brood in various stages, but all in an advanced state of decomposition, and in appearance very much resembling foul brood, to which indeed we were at first disposed to refer it. On a more minute examination, however, we discovered some points of difference, which induce us to believe that the brood died of cold some months ago, and that the bees have since been unable to remove it. With regard to the mortality among the bees themselves, it would appear to have resulted from the effects of the late severe and protracted winter. That the queen remained healthy and vigorous almost to the last may be inferred from the fact that we found eggs in nearly all the apparently empty cells.]

STRAIGHTENING COMBS IN WOODBURY FRAME-HIVE.

IN your Journal of October 11th, 1864, I mentioned that the combs in my Woodbury frame-hive had got out of the perpendicular, and I was directed to set them straight any warm day in April or May, and set them fast by clips of tin, &c. Now, how am I put them straight? I fear that if I have to pare them away much I shall destroy a lot of brood, and I do not know the best way of making them fast with these clips when straightened. I have just written to order another frame-box, and as soon as I have your answer I purpose trying the experiment and shifting each frame, as I do it, into the new box. I suppose I cannot do better as a first step, than follow the directions given in the Number for March 7th, headed "Bee-driving in Frame-hives."

Can I in any way convert a bar-hive, already filled, into a frame-hive without weakening or injuring the present stock?—A. W. B.

[Crooked combs should not be pared but straightened,

just as you would straighten a bent wire, and kept straight by such temporary appliances as your ingenuity may suggest. It will be best to get rid of the bees entirely by driving them in the ordinary way into an empty box, which must take the place of the hive. Convey the latter into a room with a fire (the kitchen, we should say), shut the doors and windows, and having previously cleared the table operate thereon at your leisure. If any combs be attached to more than one frame they must be partially or even sometimes wholly detached, set flat, and then secured in their proper places by means of wire, strips of wood, and zinc clips in the manner recommended in page 18 of the fifth edition of "Bee-keeping for the Many" (wherein, however, the printer has inverted the woodcut to our everlasting confusion). When the job is completed to your satisfaction, return the hive to its place in the apiary, remove the crown-board, and knock the cluster of bees out of their temporary domicile on to the top of the exposed bars. They will "skedaddle" down between the combs with the utmost alacrity, and the crown-board may then be replaced. The whole, or nearly the whole, of the temporary supports may be removed at the expiration of twenty-four hours, but if any combs are not then firmly fixed, such as are required should remain a day longer.

You may readily convert a bar-hive into a frame-hive by enlarging it from front to back as much as is necessary, but the bees and combs must be shifted into another domicile whilst the alteration is in progress.]

A QUEEN ENCASEMENT AND DESERTION OF HIVES.

THE pages of my bee journal have been opened but seldom during the discouraging season which we have so long been passing through, and upon those occasions only for the purpose of entering some uninteresting or commonplace observation, or to note some necessary operation; but to have at last a notable stir in our apiary, although it may have involved the loss of a hive, is rather welcome than otherwise, as an indication that we may now, backward though we certainly are, look forward to some few observations worthy of notice and of a place in the above-mentioned journal.

Although the instance of queen encasement which has just come under my observation is but one of many I have witnessed, yet the attention of apiarians having lately been called to this subject, I am induced to narrate one more such instance, although it may not, in its general features, vary much from some others, and, perhaps, will not offer anything new to those who may have turned their attention to this phenomenon.

The 30th of March, although ushered in with a rather sharp frost, with the long-continued easterly and northerly winds still exercising a retarding influence upon our backward and too quiet apiary, yielded in the afternoon of that day to a more genial sun, affording me some little opportunity of judging of the prosperity and strength of my hives, and certainly I felt a little cheered at the increased animation exhibited pretty generally throughout the apiary. One stock, more especially, of bees driven from a cottager's doomed hive in September last, indicated more vigour than I could have expected, knowing well that the tenants were but few, and having ascertained beyond doubt that no robbing or being robbed was the cause of this activity. This stir, though I knew it not, was a premonitory symptom of a general exodus of the whole tenants of the hive, showing how frequently a close observer may be misled in the external indications of a colony of bees. I did not witness it, having left the spot at the time they must have issued, neither had I any cause to suspect their having taken such a step until quite late in the day, when, in casually passing a hive, I was startled at observing a dense cluster of bees at the entrance. Of course I well understood what it indicated—namely, the encasement of a queen; surely it could not be their own sovereign, whom I knew to be a fine fertile one, young bees playing out in some numbers that very day. Still, with some misgivings, I at once commenced an inspection of the hive, an eight-bar box; first, one middle

numerous than I expected to find them, but no queen; another comb, ditto; a third, one side carefully inspected, no queen; but turning it, there she was—a beauty—pacing over the comb, all right, to my great satisfaction. So this imprisoned queen which, of course, I rescued previous to an inspection of the hive was some poor unfortunate wanderer. It did not strike me that I should look for the queenless hive amongst the quietest, rather did I expect an indication of that unfortunate condition in the most restless, at least, after the lapse of some little time; but no, all continued to drop in quietly, except one, and that one the very hive I alluded to as manifesting more than usual activity, so I at once turned it up, a straw hive, and beheld not a bee. Here, then, we have a case of the desertion of a clean, healthy hive, well stored with honey, a fertile queen, as eggs and advanced larvae indicated, a case also of fraternising with an adjoining hive, and also of violent antipathy towards, and encasement of, the poor queen. I should like to have the opinion of those who may have experienced a similar combination of events, for it is not clear to me why the bees should have deserted their hive.

I have another instance of desertion to narrate, which has turned out highly satisfactory. A late cast from a second swarm of last season, occupying a very old, but clean and wholesome butt, with combs worked down about half way, and a very fair number of bees gathering pollen, and looking promising, deserted on the 31st of March. This hive I had marked as intending to drive and transfer combs and all to one of my tan hives, but the bees have forestalled me, shifting their quarters quietly, singularly enough, to a tan hive, not, however, the one I was preparing for their reception. Although in my garden at the time I was unaware from whence the bees which filled the air proceeded, and I was too anxious in watching the movements of the swarm to ascertain. I soon observed a gradual concentration of their forces towards my large open bee-ash, containing its six hives, three of them tan, two of the latter in a prosperous condition, the other scanty in population and with a somewhat doubtful queen, and which I purposed strengthening in due time with a swarm. Now, I hoped the bees would fraternise with this hive, with or without a sovereign at their head, neither was hope long deferred, for presently I had the pleasure of watching them pouring into this hive, and also saw and captured a very fair queen, which I at once presented at the entrance; a welcome was accorded to the bees, and peace has since reigned, and the old queen, small and insignificant, was ejected three days subsequently.

We had now to look for the deserted hive, and found it to be the one above-mentioned. Why did they desert it, there being brood in all stages and many young bees which we had to transfer to their new hive? So there is no mistake as to this tan meeting with the approval of the bees. I expected the new and old tenants of this hive would all of them shortly return and partake largely of its sweets; but no, not a bee approached it for a day. Knowing, however, that sooner or later, indiscriminate robbery would induce a terrible state of excitement in my garden, I transferred a few lots of the bees upon sweetened paper to the hive, and soon found they possessed the monopoly of its contents, no doubt, to the great improvement of the state of their diminishing larder.—GEORGE FOX, Kingsbridge, Devon.

OUR LETTER BOX.

BREDA FOWLS (*Anglicus*).—We saw some of these fowls very recently in the Zoological Gardens at Amsterdam. We think there are three varieties—Black, Grey or Cuckoo, and White. They are fine birds, and have many good qualities. They are noticed in "The Poultry-Book for the Many."

IVY ROUND FOWL-HOUSE (*G. N. S.*).—It will not injure the fowls.

STEWARTON HIVES—SIZE OF THE PAVILION IN NIPPON'S HIVES (*F. T. Kirkby Lonsdale*).—Mr. W. Eagleham, Stewarton, Ayrshire, manufactures Stewarton hives. His advertisement, with prices, appeared in our Journal of March 28 and April 4th. Thirteen inches square by nine inches deep is a good size for the central compartment of a Nod's collateral hive.

ENTICING BEES (*An Old Subscriber, Morpeth*).—The only mode of enticing bees from their home is by placing hives, either wholly or partially filled with comb, in the neighbourhood of an apiary with the view of attracting swarms to enter them. This practice cannot be too strongly reprobated, but can only be guarded against by increased vigilance during the swarming season.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	APRIL 25—MAY 1, 1865.	Average Temperature near London.			Rain in last 38 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.								
25	Tu	St. MARK. P. LOUIS OF HESSE	61.3	37.3	48.3	16	45 af 4	11 af 7	41 4	18 7	●	2 9	115
26	W	Wild Tulip flowers. [BORN, 1813.	61.7	35.7	48.7	16	43 4	12 7	16 5	35 8	1	2 19	116
27	Th	Strawberry flowers.	58.3	35.5	46.9	16	41 4	14 7	1 6	43 9	2	2 29	117
28	F	Lilac flowers.	62.2	35.8	49.0	15	39 4	16 7	51 6	43 10	3	2 38	118
29	S	Harebell flowers.	62.8	37.7	50.2	13	37 4	17 7	48 7	36 11	4	2 47	119
30	Sun	2 SUNDAY AFTER EASTER.	63.3	39.8	51.6	16	36 4	19 7	48 8	morn.	5	2 55	120
1	M	St. PHILIP & ST. JAMES. PRINCE [ARTHUR BORN, 1830.	61.6	39.5	50.0	13	34 4	21 7	52 9	18 0	6	3 3	121

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 61.6°, and its night temperature 37.3°. The greatest heat was 81° on the 28th, 1840; and the lowest cold, 18°, on the 29th, 1861. The greatest fall of rain was 1.40 inch.

HARD WATER, AND CAN IT BE REMEDIED?



OMEWHAT singular it is that amongst the many inventions of late years which have for their object the utilisation of substances hitherto accounted useless no one has presented us with a ready, efficacious, and cheap mode of bringing large quantities of hard mineral water into the soft and agreeable condition in which we receive water direct from the clouds. The increasing wants of the garden, particularly at a time when rain water is least plentiful, render it often a matter of necessity to have recourse to spring water, and as this is not always of a kind agreeable to vegetation, the inventive powers of some of our chemical friends ought to devise a cheap and ready way of making it so, by the addition of some substance that would render it more palatable to the plants to which it is administered. We all know that certain well waters are next to poison to some plants, whilst nearly all are far from grateful; and as so much has been done of late to improve the quality of water intended for domestic use, surely something could be done to improve that artificially supplied to the vegetable world. It appears to be so much easier to prepare a liquid suited to the requirements of plants than one of sufficient purity for the wants of man, that I should like to engage the attention of those gentlemen who have devoted so much time and skill to the town-sewage question to ascertain if they cannot give us something cheap and efficacious to mix with our chalky water, to render it softer and more agreeable to plants, just as the same kind of water is made fit for domestic purposes by the addition of common soda. We all know that water so much charged with lime is all but fatal to a very numerous and important class of plants—Heaths, for instance—at the same time could not that lime be precipitated and the fluid either rendered purer or charged with something more in accordance with the wants of the plants? It is questionable whether even those plants which grow naturally in a chalky soil would not prefer water free from contamination, as there can be no question but that Nature furnishes water in the best possible condition for the requirements of vegetation, and this water we all know is soft, pleasant, and instead of being loaded with earthy or mineral substances, is highly charged with air, and, consequently, less dense than the same liquid is in other circumstances. Now, though it would be difficult to apply water in the same way that rain falls, assuredly water that is often used might be much improved by being deprived of its injurious ingredients, and having others suitable to the wants of plants added.

No. 213.—VOL. VIII, NEW SERIES.

In calling attention to this subject I would by no means impose any conditions, except that the substances should be cheap, readily used, and adapted to all conditions. Of course some knowledge of the character of the water to be acted upon should exist, but even in this let technicalities be dispensed with as far as possible, and let the ingredients used be of such a nature as not to be injurious to the birds or animals which may partake of the water. It cannot be expected that the same treatment would answer with all kinds of water, but some simple mode of testing the quality of the water might be devised, and that being determined, the proper remedy might be applied. Assuredly this may be accomplished, for, though most likely the first attempts may prove failures, greater difficulties have been overcome.

It is not my purpose here to enter upon the subject of watering plants which have been some time occupants of the natural ground, as that is a matter that may properly be left for another occasion, especially as there is much doubt whether artificial watering under such circumstances is favourable or not. In the case of a large class of plants, however, periodical waterings are the mainstay of their existence, and as these waterings have to be often repeated, the liquid supplied should be to their liking. I need hardly say that potted plants are those most affected by this water question, and I hope our scientific friends will be able to furnish a means by which the use of a liquid both impure and injurious may be obviated; and if they succeed in this they will confer a boon on the gardening world.—J. ROBSON.

CROSS-BREEDING STRAWBERRIES.

IN reply to what is observed at page 287, I suggested President as a good Strawberry to cross La Constante with because of its general excellence as a plant, and also on account of the size of its berries. You could not improve La Constante, except in those two particulars. I imagine that it would be best to cross President with the pollen of La Constante. I would try both ways, because nature is fitful. Eugénie, Wonderful, and especially the Frogmore Late Pines, would, I think, be good sorts to cross with the pollen of La Constante. I would also try the reverse. La Constante is a very good cropper. The land of "P." is just such land as I should suppose it would do well in. The plant in such land receives moisture by capillary attraction, and the crop will last longer than in our warmer lands.

As regards cross-breeding, we can only proceed blindfold, and hope for the best. Not one seedling in a thousand is worth anything.

In the same page I am astonished to see that Eliza (Rivers) is a bad cropper, and shy to run. The converse is the case here. It runs early and abundantly, is an amazing cropper, and in various situations in my garden it always begins and ends the season. I sent Mr Rivers and Mr. Turner 150 runners each, and I am about to send Mr. Turner 100, or more, of the runners. I fancy I have

No. 265.—VOL. XXXIII, OLD SERIES.

200 runners to spare. The plantations of Eliza in all ages are most beautiful. About three plants and a half at the first picking will fill a dessert dish. The plantations of this kind were last year picked five and six times clean, being always drenched with water after picking. I supplied the *déjeuner* at Kensington last year with more Strawberries than could be eaten. The sorts were Eliza, Wonderful, and Empress Eugénie. They seemed to give great satisfaction.

I never had a finer array of Strawberry plants than now, nor in more splendid condition. They look like clumps of Firs. The question of "G. S.," at the same page, Mr. de Jonghe must answer for himself. I suppose he meant that when you take up a plant in spring with the soil caked you must slacken it with your hand. If you do not mean to crop it, it is best to shake it out clean. Pot Rose plants, if the soil around them in the pot is clayey, should always be slackened with the hand before they are planted.—W. F. RADOLYFFE, *Tarrant Rushton, Blandford.*

A FEW WORDS ABOUT CHISWICK.

"F. R. H. S.," at page 244 of *THE JOURNAL OF HORTICULTURE*, with great good sense disposes of Mr. Bateman's speech, and writes truly, feelingly, and practically, on the condition of Chiswick and its prospects. I, as a practical horticulturist, feel more concerned about the interests of Chiswick than about the inconsiderate words of Mr. Bateman; and I crave space in your columns to offer my thanks to "F. R. H. S.," and record my esteem for a true "Old Fellow" on the side of gardening.

My introduction to gardening was under Mr. J. D.—, one of the most accomplished gardeners that took a diploma at Chiswick when "The Chiswick of the past was before its day." From my learned master I imbibed a regard for Chiswick, and learned much from its journals or transactions. Chiswick was the object of my first visit to London; although then beginning to totter, there was much to instruct and interest. I saw a slight revival under my lamented friend Mr. G. McEwen, and recently I saw Chiswick in what is styled "a most efficient state." Such effrontery is past belief. I wish here to state that I bring no charge or insinuation against the respectable men who conduct the work at Chiswick. I speak of Chiswick Garden as being one of a public character, which was esteemed in the progress of horticulture, but is now in a state of neglect as regards the objects for which it was founded. It has been stated that some of the chief objects for which Chiswick Garden was founded having been accomplished, it is no longer important to that end. Why, the same loose remarks might be applied to the leading universities in England, Scotland, and Ireland.

Most firmly do I believe that a high school of gardening is now more needed than ever it was. The duties and requirements of a gardener have not only immensely increased, but are of a much higher order, and require more methodical training. I know that Chiswick, to be of any practical good, must be under the direction of practical talent; that the superintendent must be a man of large experience, familiar with the highest interests of gardening, and give his labour with undivided attention to improve and develop the resources of the garden.

The present arrangements at Chiswick are opposed to the progress of horticulture, and if I did not believe, with your correspondent "F. R. H. S.," that Chiswick has yet valuable resources, I would not trouble you with a remark on Chiswick in its present state. Kew would never injure Chiswick if the garden were conducted as a garden of enlightened experiment and progress.

My employer—an "Old Fellow"—goes to Chiswick and complains that the neglected state of the arboretum, and the trees without names, and walks in bad order, make a visit a trial; in the houses he sees certain plants that interest him, but finds they are without names. The Vines, as a collection, are interesting, and in the right place; the hardy fruit trees are another established feature; but what can be said of any special plan or system of culture? In speaking of the fruit trees, I am not unmindful of the services of Mr. R. Thompson. Now, Chiswick, as it should be, would be a great aid as a standard of fruit culture; it

should also be a position for a young gardener to acquire a fellowship, and give a status and finish to young men of character, which rarely or never can be acquired in private gardens.—C. M. D.

VISITS TO GARDENS PUBLIC AND PRIVATE.

MR. B. S. WILLIAMS'S, VICTORIA AND PARADISE NURSERIES, HOLLOWAY.

WHEN I last visited Mr. Williams's, the Victoria Nursery was quite in an embryo state, and all the energies of this rapidly rising establishment were concentrated in the Paradise Nursery. Now, however, I saw a great change, and indications of a still greater one. Independently of the houses that have arisen since I was there, others are in progress of erection, and before long nearly the whole of the ground will be covered with glass. The more valuable productions, for whose culture Mr. Williams is so noted, are being removed there, and hereafter the older nursery will be given up to more hardy things, while the general nursery stock will be grown at some distance. London is now so rapidly, like the fabled cuttle-fish, extending its great tentacula on every side, drawing into its capacious maw the green fields and open spaces that men now only in middle life played in when boys—that perforce the nurseryman who desires healthy stock must seek space elsewhere, and even the foot of Highgate Hill is too much in London to attain this.

Two features particularly struck me in looking over Mr. Williams's varied stock—the very fine specimen plants that he possesses, and the rich and varied selection of new, rare, and choice plants. The greater portion of the former are contained in the new show conservatory which he has built at the entrance of the Victoria Nursery, at the bottom of Highgate Hill. This beautiful building, certainly one of the finest in the neighbourhood of London, is 100 feet long by 40 feet wide, with a broad walk up the centre, wide enough for crinoline in its most capacious days—days which all gardeners will rejoice to hear are on the wane. These specimens Mr. Williams has been gathering together from various sources, more especially from the continent. Many of them are arranged in pairs—two fine pairs of *Yucca variegata*, said to be the finest in growth, a pair of *Yucca Stokesii*, *Zamia*, *Cycas revoluta*, *Dracæna indivisa* and *lineata*, *Chamærops excelsa*, *Dracæna draco*, *Rhododendron Nuttallii*, again showing splendidly for bloom, and other plants of a similar showy character and in fine condition; interspersed with these are some magnificent specimens of tree Ferns. *Cyathea dealbata*, *medullaris*, and *excolis*, *Dicksonia antarctica*, *Cibotium princeps* and *Schiedei*, were amongst the very fine ornamental Ferns that thus adorn this house. The last of these deserves a passing notice. The fluffy down that envelopes the young fronds is one of the most certain styptics that I know, and any one who grows large Ferns would be really conferring a benefit on his neighbours by growing it. It was only the other day that in pruning I sliced off a large piece of my thumb. Having some of this by me I applied it, and although the wound gave great promise of bleeding profusely, it instantly stopped it. The collection of *Yuccas*, and *Dracænas*, and allied plants in this house is alone worth the journey for those who admire such things. Passing out of this house, of which there is the less need to say much, as an excellent description and engraving of it appeared in the last volume of *THE JOURNAL OF HORTICULTURE*, into the garden, there is a large Fern-house in course of erection, and ground is being prepared for five span-roofs for Orchids, &c. We then come to a greenhouse, in which is a nice stock of Heaths and hard-wooded plants, such as *Aphelaxis*, *Genetyllis*, *Boronia*, *Dracophyllum*, well set for bloom, and in very healthy condition. In a Pine-house was a large collection of young Pines, including a goodly number of what is said to be one of the finest in cultivation, and which I have seen largely grown in France—Charlotte Rothschild. In another house was a large stock of Geraniums, including Beck's new greenhouse Pelargoniums, and some Zonate of Mr. Williams's own—Annie Williams, in the way of Mrs. Milford, and Golden Nugget. Mr. Williams speaks highly of Variegated Stella as a good addition to the Nosegay section with variegated leaves.

Facing the other entrance to the Nursery are two small houses, in which are some fine specimens of Azaleas, comprising some of the newest and best kinds.

The Paradise Nursery still retains a large number of those valuable plants for which Mr. Williams's establishment is so famous. Thus in his intermediate-house were fine plants of *Zamia Lehmanni*, *Cycas circinalis* in fruit, *Croton picta*, *Cyathæa elegans*, *Cyathæa Smithii*, and some very fine plants of the very useful *Statice*—*macrophylla*, *Holfordi*, and *profusa*, together with a new one not yet named. Here also were some of those curious half-standard French *Epiphyllums*, which, however, were a failure. They are apparently grafted on a stove stock, and hence they will not do, as they were promised, in a greenhouse. The Orchid-house, as might be expected from Mr. Williams's high repute as one of the first cultivators in the kingdom, was exceedingly rich in kinds, though, save in a few instances, one does not expect to see the fine specimens which are to be seen in such establishments as Mr. Bucker's, Mr. Warner's, or Mr. Day's; while the vigorous health of the plants bore ample testimony to the success which both Mr. Williams and his intelligent foreman, Mr. Burton, have attained in the cultivation of this beautiful and popular tribe of plants, for now that the cool-house treatment has proved to be so successful, it has brought their culture within the reach of a number of persons who never before thought of it. *Bletia* sp., very pretty and sweet; *Cypripedium biflorum*; *Sophranitis grandiflora*, with bright scarlet flowers; *Vanda tricolor* and *suavis*; *Dendrobium Dayanum*, quite new, with purple lip; *Cattleya quadricolor*, figured in the last Number of Sir Wm. Hooker's "Botanical Magazine;" *Phalænopsis Schilleriana*, *amabilis*, and *grandiflora*; *Dendrobium intermedium*, very delicate in its colouring, were amongst those in flower. Besides these, there were *Vanda gigantea* and *Batemani*, *Oncidium sarcodes*, and other new and rare kinds. Some of the healthiest plants of *Anæctochilus* that I have seen were here, and not grown in a case as generally. Fine plants of *setacens*, *cordatus*, *Lobbii*, and a new one allied to *Roxburghii*, were amongst the most remarkable. The very fine collection of *Sarracenias* which Mr. Williams exhibited at the Royal Horticultural Society's meetings were also to be seen here, and some fine-foliaged plants, such as *Peperomia arifolia*, *Chameranthemum reticulatum*, and others.

Mr. Williams's collection of Ferns is a very rich one; and from the tiniest Fernlet (if we may use such a term) to the gigantic tree Ferns of New Zealand and Australia, they are to be seen here in every condition. The beautiful Gold Fern, *Gymnogramma Laucheana*, has produced some fine seedlings, many of which promise to be very distinct; while the beautiful young fronds of *Lomaria L'Herminieri* show that bright colour is to be had in this beautiful tribe, for they are of a bright rosy pink. *Gleichenia microphylla*, and a new species allied perhaps to *pubescens*; *Alsophila latibrosa*, a very rich orange green; *Platyceium biforme*; and *Davallia aculeata*, with very graceful foliage, were amongst some of the most remarkable that I noticed.

It were tedious to enumerate the large collection of fine-foliaged and decorative plants that Mr. Williams has congregated here; but a few I would fain notice, such as *Nidularia picta*, a Bromeliaceous plant, with fine foliage, and producing a spike of bright scarlet flowers; *Jacaranda filicifolia*; *Oreopanax dactylifolium*, with its curious, broad, deeply notched leaf; *Tradescantia odoratissima*, with bright blue-tinted flowers; *Miranda striata* and *Van den Heckeii*, and *Pachycentra Walkeri*, a fine basket plant.

It is well known that Mr. Williams is a diligent caterer for the novelty-seeking public in every way. Be it an Orchid or an Arabis, a botanical curiosity or a simple florist's flower, he is glad to avail himself of it to please those Athenian characters, who ever want some new thing. Thus, he has a very curious *Fuchsia*, in which the flowers, instead of being pendant, stand upright, making it not only a remarkable object, but also very desirable for bouquets; a beautiful-striped *Petunia* from Mr. Holland, who is well known as such a successful raiser; and a brilliant-flowered *Calceolaria*, called Bird of Paradise. He has also a very curious *Azalea*, unlike any of the striped kinds in cultivation, called *Splendidissima*, of which I hope to see more by-and-by. Mr. Williams has also largely imported *Lilium auratum*, and, besides that, four or five varieties of a Lily

which the gentleman who sent it to him from Japan says is far beyond what we have come to regard as the queen of Lilies; if so, the lovers of this beautiful tribe have a rich treat in store for them.

I have endeavoured to give a passing glance at the many treasures contained in Mr. Williams's two establishments, and I know have failed to convey anything like an adequate notion of their value and beauty; but any one who is desirous of seeing with his own eyes is sure to meet a courteous reception, and if he is at all affected with the floral mania in any form or shape, it cannot but be that he will catch the virus in some way or other.—D., Deal.

ROYAL HORTICULTURAL SOCIETY.

APRIL 18TH.

FLORAL COMMITTEE.—The Committee assembled on this day, and made the following awards. Mr. Turner, Slough, exhibited a very superb collection of Azaleas, one mass of brilliant flowers, which fully occupied one corner of the council-room. For this the Committee awarded a special certificate; and having recommended that one of the Society's medals should be given for the same, the Council readily acceded to the proposal, and awarded to Mr. Turner the silver Banksian medal. Mr. Turner also sent a new *Bougainvillea* with pale pinkish red bracts, forming a pleasing contrast with the mauve-coloured varieties—first-class certificate, and four seedling *Auriculas* selfs. One named Godfrey, a dark mulberry purple, a fine flower, received a first-class certificate; *Auricula* Harry, a lighter shade of the same colour, a second-class certificate. From the same exhibitor came also a Hybrid Perpetual Rose General de Hantpoul, and *Cineraria* Herbert, a nice flower with bright blue margin.

Mr. Bull, Chelsea, exhibited a great curiosity in the form of a double *Mimulus*. The varieties *Mimulus duplex* Andersoni and *Mimulus National* were awarded a first-class certificate. The double form of this *Mimulus* resembles the *Polyanthus* known as Hose-in-hose, having the appearance of one flower being placed in another, the calyx forming a second flower, and exactly resembling in colour and markings the true flower. When the flower falls the calyx remains for some time, the plant having the advantage of appearing still in full flower. Among the other plants sent by Mr. Bull were *Sedum villosum* (?) variegatum, a useful plant for conservatory decoration—second-class certificate; *Azalea* President Victor Van den Hecke, a small white flower with bright pink stripes, but too rough in the outline; and *Salvadora persica*, supposed to be the Mustard plant of Scripture; but from the remarks made by the Rev. Mr. Berkeley there seem to be great doubts as to the identity of the plant. *Hibiscus ferox* was too young a plant for its merits to be decided upon; and *Camellia Cocchi* was a pretty white-striped variety, resembling but not equal to many known sorts in cultivation.

Mr. Jackson, Kingston, sent two *Pelargoniums* for early forcing, but of no merit; and W. W. Saunders, Esq., a collection of interesting plants, and some cut spikes of three beautiful *Aloes*, never seen before by many of those present, who seemed astonished that what are generally supposed to be uninteresting plants could produce such attractive flowers. Mr. Saunders gave some hints on the cultivation of the *Aloes*. He likewise sent *Amaryllis* sp., one of those discovered and sent home by Dr. Welwitch; *Remusatia vivipara*, an old plant long known in this country, though but rarely seen, remarkable for its one solitary gigantic leaf; this is one of the curious family of Aroids; also *Eulophia* sp., a dark chocolate-flowering Orchid from Brazil, and *Scilla natalensis*, with broad green foliage, and a tall spike of light blue flowers, for which a label of commendation was awarded.

Mr. Wm. Paul sent Hybrid Perpetual Roses Madame Emile Boyau and Princess of Lichtenstein, new light varieties, nearly white. Both of these Roses will be a great acquisition to every collection. Mr. Osborne, Fulham, had *Bletia* sp. from Japan. This pretty purple-flowering plant, with its graceful foliage, supposed to be nearly hardy, was discovered by Mr. Fortune, who speaks most highly in its praise. It received a first-class certificate. Mr. Osborne

sent also a small collection of other Orchids. Mr. George Smith, Hornsey Road, had *Pelargonium Stella Variiegatum*. This received a certificate last year. Messrs. Low sent a beautiful collection of Orchids, for which a special certificate was given. Among them were fine plants of *Dendrobium Dalhousianum*, a very handsome Orchid—first-class certificate; *Erica fragrans* from the Cape of Good Hope, with close, erect, bright pink flowers, delicately scented, a very useful variety—first-class certificate; and *Phalenopsis* sp. *pulchella* (?) from Moulmein, a very small but beautifully-marked flower. From W. Marshall, Esq., came a collection of Orchids and other plants, a fine specimen of *Phalenopsis grandiflora*, *Odontoglossum Bluntii*, said to be the *O. Alexandræ*, but not yet proved to be so, a very pretty Orchid—first-class certificate; *Tropæolum*, &c. A special certificate was awarded for the collection. Mr. Parsons sent *Gymnogramma Parsonsii*, a very curious golden and crested Fern—first-class certificate; and G. Cooper, Esq., *Dendrobium nobile*, *Sophranitis grandiflora*, and *Azalea Roi des Doubles*. Messrs. Backhouse, York, exhibited a new *Anemone*, *Stellata fulgens*, most brilliant in colour, but a tender plant—first-class certificate; and Mr. Williams, Holloway, *Pteris* sp., five-lobed fronds, a very pretty Fern—second-class certificate; a fine cut head of flowers of *Rhododendron Nuttallii*, with gigantic creamy white flowers as large as dinner tumblers—special certificate; *Amaryllis refulgens*, a fine bright dark scarlet flower, rather deficient in form—second-class certificate; *Bletia* sp.; *Sophranitis grandiflora*, a fine specimen—special certificate. In Mr. Williams's collection were some beautifully variegated Aloes, and a special certificate was awarded for it.

Mr. J. Veitch sent four varieties of his beautiful new *Primula cortusoides*. These plants, from Japan, are said to be hardy, and will be most useful among other spring flowers: three of them, *P. alba*, nearly white; *P. grandiflora*, pale pink; and *P. amœna*, dark rose, received each a first-class certificate. Seedling *Rhododendron Henryanum*, with only one large white flower, was likewise shown by the same firm. A special certificate was awarded for Mr. Veitch's collection, which contained many beautiful and rare plants. Mr. Ayres, Biggleswade, exhibited two seedling *Zonate Pelargoniums* and four seedling *Conifers* named *Thujas*, but proved to be *Ketinosporas*, two of which—*Lambertiana* and *prona*—received first-class certificates. Messrs. A. Henderson & Co., Pine Apple Place, exhibited a new *Begonia* of a climbing habit, very suitable for baskets; *Eriocarpus reticulatus*, *O. eo. anax dactylifolium*, and *Anadenia pulchella*. These plants by some mistake were not entered, and, consequently, not brought before the Floral Committee. Lady Dorothy Nevill exhibited the curious *Nardoo* plant, *Marsilia macropus*. This plant is said to be eaten as a salad by the Australian cannibals.

FRUIT COMMITTEE.—A collection of finely-coloured Apples, consisting of upwards of sixty varieties, and all of them in an excellent state of preservation, was shown by Mr. Rivers; but as he expressly stated in a letter accompanying the collection, that they were intended for the scientific meeting, and not for the Committee, they were not adjudicated on. From Lady Dorothy Nevill came fruit of the Loquat (*Eriobotrya japonica*); and from Mr. Lee, Clevedon, near Bristol, three dishes of Apples, one of which resembled the Holland-bury. Roundway *Magnum Bonum*, which had previously been submitted to the Committee and received a first-class certificate, was again shown by Mr. Turner, of Slough; and Mr. Melville, gardener to the Earl of Roseberry, Dalmeny Park, Edinburgh, sent two kinds of Sprouts, one of them called Tom Thumb being very dwarf, but neither of them equal to Brussels Sprouts.

At the scientific meeting held on the 18th inst., W. Wilson Saunders, Esq., presided, and the awards of the Floral Committee having been read by the Rev. Joshua Dix, the Rev. M. J. Berkeley proceeded to point out and comment on the most remarkable of the objects exhibited. He first directed attention to the fine collection of Apples sent by Mr. Rivers, who accounted for their high colour and excellent preservation, first, by their having been kept in a cool cellar with a temperature of 44° all the winter, and second, by the season having been dry, and their being produced in an open

exposure. The fruit of the *Eriobotrya japonica* or Loquat, from Lady Dorothy Nevill, was then briefly alluded to; also the *Marsilia macropus* or Nardoo plant, on the fruit or sporangia of which the expedition of Burke and Wills lived. Spores were allied in their nature to the pollen of *Phenogams*, and Mr. Berkeley mentioned as a curious fact that the pollen of a species of *Typha* was sold for food in the bazaars of the East. *Dendrobium Dalhousianum*, *Odontoglossum Alexandræ*, and a species of *Bletia*, which was of interest from its being likely to prove nearly, if not quite, hardy, and the magnificent spike of *Phalenopsis grandiflora* from the garden of Mr. Marshall, of Enfield, were then pointed out, and with respect to the last Mr. Berkeley mentioned that the stem of the Bornean *Phalenopsis* is always brown, whilst that from the Philippines is green. In reference to variegated Yuccas, it was remarked that if plants grown in heat were removed to a cooler temperature the variegation was more marked in consequence of the chlorophyll being more fully developed in the cold. Mr. Berkeley, in speaking of *Gymnogramma Parsonsii*, stated that spores taken from the normal parts of Ferns usually produced seedlings of the usual character of the plant, whilst those from abnormal parts produced abnormal plants. With reference to the new red *Bougainvillea*, he believed that it was the result of a cross between *B. speciosa* and *B. glabra*, the bracts of the former being obtuse, whilst those of the latter were cuspidate. A plant of considerable interest was that sent by Mr. Bull as the Mustard-tree of Scripture (*Salvadora persica*), and which was the only species in the genus. He had his doubts, however, whether this plant was really the one alluded to in the parable, for the name of one plant was sometimes in the course of time transferred to another, thus the old Primrose was our Daisy, and the old Eglantine was certainly not our Sweet Briar. Dr. Royle, however, who was the botanist that had bestowed most attention on the plants of Scripture, considered the one before them to be the true Mustard tree. It certainly grew to be a tree 20 feet high on the shores of Lake Tiberias, where the parable was spoken; but Dr. Hooker had informed him (Mr. Berkeley) that when in Palestine he saw *Sinapis nigra* all over the country, that it there grew 10 feet high, and that the *Salvadora*, on the contrary, was a rare plant; and he (Mr. Berkeley) thought that the balance of evidence was in favour of the Mustard of Scripture being the same as our own. Mr. Veitch's new *Primulas* and *Rhododendron*, Messrs. Backhouse's *Anemone fulgens*, Mr. Williams's head of *Rhododendron Nuttallii*, a *Euphorbia* from Mr. Wilson Saunders, Mr. Bull's *Mimulus* having the calyx coloured like a second corolla, and other plants were also pointed out to the meeting.

The Chairman then begged to say a few words with regard to the plants which he had himself sent. The *Amaryllis*, he said, had been discovered by Dr. Welwitch who, like Dr. Livingstone, had started to make observations in the interior of the continent of Africa, but departing from the other side. Welwitch, however, was seized with illness and could not cross, but singularly enough he and Dr. Livingstone met, and near there this brilliant *Amaryllis* was found. Mr. Saunders said, he had likewise sent some Aloes in bloom, for it was generally thought that these plants were of little interest, but they were not understood. The common mode of cultivation was to starve them out of existence, but this was a great mistake, for under liberal treatment and with a moist atmosphere they produced some of the finest of flowers. He had also sent a leaf of *Remusatia vivipara* remarkable for its great size and short duration. On first starting into growth the leaf is rolled up like a piece of paper; it then begins to expand but is very flabby, it acquires solidity by degrees, but in six weeks from its appearance it dies down and the plant sinks to rest.

Major B. Trevor Clarke, who possesses nearly every kind of Cotton grown in this country, offered some observations on its culture. Discarding the distinctions of annual and biennial, he said that for cultural purposes the Cottons might be divided into two distinct races, that of the eastern and that of the western hemisphere, and each of these races was divisible into two sections, the early and the late-flowering. Of the early-flowering kinds of the South American type (*Gossypium barbadense*), those most likely to come into the hands of amateurs, were the Sea Island, the

Egyptian, apparently an inferior race of the same; the New Orleans, to which he referred the magnificent Vine Cotton; and, lastly, that known by the name of nankinense. The seeds of this section should be sown in February, or even so early as January, an important point being to have the plants strong and woody before the work of reproduction began. A light soil was most suitable at first, but as they advanced in growth they required a strong loam, and with sufficient light, heat, and water, in this they would grow very vigorously. If red spider made its appearance a moister atmosphere should be maintained. Ten-inch pots were the size which he recommended, but if only a pod or two were required, a smaller size would do. The conditions requisite for the production of firm wood, short laterals, and well-filled pods, were moderate pot-room and a moist atmosphere during the period of growth. With this treatment the plants flower about midsummer, and continue flowering till late in autumn, when they may either be thrown away or preserved till the following year, when they should be cut down to the firm wood in spring. With regard to the late-flowering sorts, they would, perhaps, show a flower or two in November, and then rest for three months till spring, when growth would recommence. Such kinds should be sown later than the early ones—say in April, grown on during the first year, and fruited in 10-inch pots in the following season. The principal of such kinds were the West Indian green seed, the Mexican Gulf Hill Cotton the Bourbon, the Kidney, and the Peruvian. *Gossypium indicum*, Major Clarke stated, should have more heat, good drainage, and light soil. The small-growing sorts of this family were well worthy of cultivation, being pretty stove plants.

Mr. Dix called attention to a piece of *Araucaria imbricata* which he had found in a wood near Mr. G. F. Wilson's residence, at Weybridge, and which, almost incredible as it might appear, was, he had been informed, barked by hares and rabbits, and many trees had been barked in the same way. The Chairman thought that the mischief was more likely to have been caused by squirrels, and inquired how high the trees had been barked. Mr. Dix said 2 or 3 feet. Mr. Graham stated that he had found train oil, assafoetida, and brimstone an effectual preventive of the attacks of hares and rabbits, and the application would last for two years.

Major Clarke begged to direct the attention of the meeting to a small collection of plants which he had sent, as illustrating a horticultural trick, which was based on the fact that seeds will remain dormant for a length of time, when there is no influence to call their vitality into action. When his friends going abroad offered to send him seeds he told them he did not want anything of the kind, but if they would go into the jungle and send him a spadeful of jungle earth that was all he wanted, but the only person who had done so was a brother of his. The soil sent home was put in a moist stove, and in four weeks the pans were alive with vegetation. Major Clarke concluded by presenting the ladies with Hyacinths and Primroses which he had brought from his garden at Daventry.

The proceedings concluded with votes of thanks to Mr. Rivers and the other exhibitors, and to Major Clarke for his observations on Cotton.

CROWN EAST COURT,

THE SEAT OF A. H. ROYDS, ESQ.,

Is about three miles from Worcester. Having introduced myself to Mr. Cox, the head gardener, with a request to see around the place, he very willingly consented and acted the part of a good cicerone, by directing my attention to everything worthy of notice. The first place entered was the kitchen garden of three acres. It contains a range of vinerias, 120 feet long by 18 feet wide, in three divisions. Among the Grapes grown is the Alicante, which Mr. Cox prefers to Lady Downe's. The Alicante is generally supposed to be a synonyme for the Black Prince; but this Grape appears to be a distinct variety. There is also another range, 60 feet long by 18 feet wide, and likewise in three divisions. The first contained fruiting Pines, the principal sorts were Queens, Moscow Queens, Montserrat, and Providences; the second division was occupied by Cucumbers;

and the third division by succession Pine plants. Three Providence Pines weighed 30 lbs., and there were some good Queens only fifteen months old, in fruit. Another range of pits, 68 feet long by 10 wide, in four divisions, contained Melons, Strawberries, Kidney Beans, &c. In the Fern-pit were fine specimens of *Gymnogrammas*. All the houses and pits were heated by one boiler (Walker's); the fire passes through the tubes, it requires no brickwork to set it in, and it is self-feeding.

All the dwarf, standard, pyramid, and wall-fruit trees have only been planted five years. They were fine healthy trees bearing immense crops. Mr. Cox pursues a system every year with his fruit trees, which, to judge by his crops, is worthy of adoption. In the November of one year he lifts the points of the roots, and the following season he lifts the base of the tree. The collection of Apples included good examples of Cellini, Hawthornden, weighing 18 ozs. each; Warner's King, a lemon-coloured Apple weighing 19½ ozs.; Blenheim Orange, beautifully coloured; indeed, the bright and rich colours of all fruit attest the genial climate and fertile soil of Worcestershire. It may be well to mention, that those styled pyramids are upright trees, from 3 to 6 feet high, and upwards. These are kept pruned to furnish branches all round the stem. Of the collection of Pears, the following were conspicuous for size and quality:—Beurré Diel, which is kept thin of branches to admit sufficient air amongst its large foliage; Easter Beurré; Knight's Monarch, Thompson's, a most delicious first-rate Pear; Ne Plus Meuris, one of the best late Pears, although not so handsome as some; Louise Bonne of Jersey; Glou Morceau; Bergamotte Esperen, a first-rate late Pear; Van Mons Léon le Clerc, a first-class Pear, ripe about Christmas; Beurré de Rance; Jean de Witte, of the nature of Glou Morceau, but keeping longer and not quite so rich; Black Pear of Worcester, a very good Pear for stewing, and which becomes red in cooking. This must be a very old Pear, for it is said that Queen Elizabeth in one of her progresses through the country, observed that they were planted in the High Street, Worcester.

A sheltered situation on the slope of the hill was chosen for the house, which has lately been erected. It is a commodious building, commands a view of several lakes, the resort of wild ducks, widgeons, &c., and has flower-beds on grass in front. The pleasure grounds are furnished with young vigorous specimens of *Juniperus excelsa*, about 7 feet high; *Araucaria excelsa*, 8 feet high; *Picea pinsapo*; *Cryptomeria japonica*, 12 feet high; a beautiful specimen of *Libocedrus chilensis* (the Chilean Arbor Vitæ), an exceedingly pretty conical tree, from the Andes of Chili, where it grows from 60 to 80 feet high; Portugal Laurels, 10 feet high and only planted six years; a good variety and large specimen of Pampas Grass; Lime trees; double white Hawthorns; and Turkey Oaks, one of them a magnificent specimen. There is a beautiful little chapel, in the Gothic style, contiguous to the house and embosomed in shrubs. A short distance from the house is high ground commanding extensive prospects around Malvern and along the slopes of its picturesque hills and rich valley, celebrated for its beautiful scenery, over an extent of country twenty miles in length. The prospect includes the woods of Coteridge Court with its magnificent avenue of Lime trees in double columns, and the diversified scenery of Breda Hill; the varying foliage and autumnal tints of the tawny Plane, the pale yellow Maple, the spotted Elms, the lemon-coloured Ash, and the hues of the other forest trees, giving a gorgeousness and splendour to the landscape that no other season can produce.

To this estate of six hundred acres belongs a character of greatness that is not to be measured by the extent of the grounds, but by the variety in the different distances, the contrasts in the different forms of the boundaries, and the beauty and extent of the landscape scenery, which neither ordinary labour could modify, nor the compass of a pleasure ground include.—WILLIAM KEANE.

OBITUARY.—It is with much regret that we have to announce the loss of Mr. Ogle, for nearly twenty-one years head gardener at Eridge Castle, Kent. He attended the Fruit Committee held at Kensington, on the 4th inst., and

on the same night he was no more. He was much esteemed by his brother gardeners and horticulturists generally, and has left a widow to lament his loss. Mr. J. Johnston, gardener to the Duke of Wellington, at Strathfieldsaye, a position which he had held for many years, has likewise to be added to the list of the departed.

ON FORM AND COLOUR.

(Continued from page 280.)

BUT, it may be argued, the foliage of the ordinary bedding plants, Geraniums, Verbenas, Calceolarias, Pentstemons, &c., is deficient in marked character, and, indeed, devoid of beauty. Just so: everything has been sacrificed to this almost childish craving for positive colour. Foliage has been regarded simply with respect to colour; the truss must be so and so, the habit such. Surely the rules so empirically insisted on by florists respecting the form, height, and habit of flowers are akin to the barbarous treatment of cutting trees into peacocks. Does it not savour of this when tweezers and plugs are in requisition at our exhibitions to improve the Dahlia, Picotee, or Chrysanthemum? What a consolation it is that the queen of flowers will not submit to be tampered with! But why not employ, for the present at least, other plants for the purpose? As I have said before, a judicious admixture of plants remarkable for their foliage would add a charm to the flower garden at present utterly wanting. The able and enterprising manager of Battersea Park, Mr. Gibson, has shown what can be done by the use of the so-called foliaged plants. Although it may not be advisable to have single lines of *Ficus elastica*, oblong beds of *Cannas* and *Wigandias*, or the black *Coleus* with *Cineraria maritima*, we have abundant proof, from the success already attending Mr. G.'s efforts, of what may be accomplished by energy and good sense to make the flower garden a really interesting and delightful retreat.

I shall not presume to dictate to the intelligent readers of this Journal any new system of flower-gardening, but submit simply a few suggestions, to be taken, as previously hinted, for what they are worth. Reverting, then, to our simile of the trumpet, if the resources of the establishment are limited by all means attempt only a solo, but let there be a good accompaniment. Some of the grandest effects are produced in music by a simple unison, but unison does not mean restriction to one note—there are tones of colour. Suppose, however, for example, we take *Cerise Unique* Geranium or Shrubland Pet for a circular bed; plant among these, if not too exposed, the common Fern *Filix-mas*, so that the fronds shall partly overshadow the cerise, and we have then a varying play of colour from the shadow of the Fern fronds. *Filix femina* browns and fades too early in direct sunlight. Or what an exquisite group might thus be formed, or, better still, in the conservatory with Shrubland Pet, Madame Vaucher, and *Adiantum capillus-Veneris*. Combinations of the various shades of blue and white are beautiful, but should be dashed with crimson to give warmth. Avoid the conjunction of scarlet and yellow, of yellow and blue, and in every case let there be at least one plant remarkable for the beauty of its foliage occupying a central position. It is the key of the picture; on it the eye first rests, and then wanders at leisure over the details. *Cannas*, *Wigandias*, Ferns, large plants of *Centaurea candidissima*, or even the great variegated Thistle, and the Artichoke, make fine centre plants: no doubt your experienced readers could suggest many others equally or more suitable. Crimson, cerise, and white, and purple and sulphur yellow, form pleasing combinations; so also crimson and variegated *Ba'm*, purple and white. Generally speaking the secondary colours are more manageable and harmonise best.

I will not weary your readers with further detail: no doubt many of them have enjoyed during the past summer more beautiful combinations of colour than I could possibly suggest, or than may even be found in the catalogues of the seedsmen, in which may be discovered not only scarlet and yellow, but *Perilla* and *Feverfew*, the bassoon, and the piccolo. I may add, however, that my most successful bed last summer was a pear-shaped one, edged with variegated *Alyssum*, a group of Imperial crimson Geranium in the

centre, Purple King dashed with cerise in the body of the pear, and yellow *Calceolaria* at intervals round the inside edge of variegated *Alyssum*. It was, however, merely a colour bed. A reaction, however, has taken place already. A growing improvement is manifest in the taste for plants with fine foliage, and especially Ferns. It is the function of horticultural societies to foster and promote this taste. How may this be done?

A complaint has long been urged against the great flower shows, that there is little or no novelty in them, and this is especially the case with large miscellaneous plants—the same plants occupy the same places year after year. Why not, in place of one of the long central stages at the Kensington Gardens, allot space for groups of plants, circles, oblongs, or pyramidal form, and, as an extension of the system, offer prizes for the best arrangement of flowers in beds? It would be easy for gardeners to reserve in pots or square pans sufficient plants for the purpose. Let them be arranged by the exhibitor himself, under proper regulations, on a piece of well-kept lawn. After the decision of the judges the prize groups could be readily removed to a more conspicuous position reserved for them within the exhibition tent, or elsewhere. The great horticultural societies would thus enable the public to form for themselves an estimate of what is most suitable for them, a more correct knowledge of colour and form as regards gardening would be disseminated, and the public taste improved. It would add, moreover, an interesting and attractive feature to our metropolitan shows. —T. W., Harrow.

BULBS UNPLANTED FOR A YEAR—VITALITY OF SOME FLOWER SEEDS.

IN answer to a query in No. 211 (April 11th), I am able to state that, having accidentally mislaid some Tulip and Turban *Kanunculus* bulbs at the time of planting, they were left out of the ground till the following season, when I planted them in the ordinary manner, and that both kinds flowered as well as those which had only been the usual time out of the ground, and, I think, a little earlier. I will also mention that having once collected a large quantity of seed from some peculiarly fine Brompton Stocks I continued sowing portions of it for eight or ten years, and it did not, in the least, deteriorate.

I lately tried an experiment on some *Anemone* seed, sowing the product of three different years in three ridges in the same bed, and I could not perceive any difference, either in the time of their coming up or flowering, between the three-year-old seed and that which had been lately gathered.—AGNES.

NEW BOOKS.

Select Orchidaceous Plants. By Robert Warner and B. S. Williams. Part 10.

WE give the highest praise when we say that this is quite equal to any of its predecessors. It has portraits, with the usual amount of history and cultural directions, of *Galeandra Devoniana*, *Epidendrum Skinneri superbum*, *Arpophyllum giganteum*, and *Lælia purpurata*. This completes the volume, comprising a series of forty plates, and is deserving of a place not only in the library of every lover of gardening, but on every drawing-room table. We are very glad to see the announcement at the conclusion of the introduction, that a second series of forty plates, forming a companion volume, is preparing for issue in ten parts.

The Chrysanthemum, its History and Culture. By J. Salter, F.R.H.S. Groombridge & Sons.

MR. SALTER, of the Versailles Nursery, Hammenmith, has been known for about thirty years as a special and most successful cultivator of the *Chrysanthemum*. He has now published a volume relative to this his chosen flower. It is well illustrated with portraits of model blooms; it gives an interesting history of the introduction and progress of this florists' flower, and ample directions for its culture and training as standards, as pyramids, as specimens, and for cut

flowers; Pompons as well as the large-flowered varieties are fully considered; and the volume concludes with descriptive lists, arranged not only according to their colours, but alphabetically, and pointing out for what purpose each variety is especially suited.

We strongly recommend the volume to our readers, and we will only quote one or two passages tracing the progress of the flower in this country.

"The first *bona fide* English seedlings were raised in Norfolk by Mr. Short and Mr. Freestone nearly thirty years ago. Nonpareil, Norfolk Hero, Prince of Wales, and a few others, were the pioneers. About the same time, 1836, an amateur in Jersey turned his attention to the Chrysanthemum; having no doubt received some plants from his French neighbours, and heard of their success in saving seed, he was induced to attempt it, especially as the Channel Islands had long been celebrated for the production of seedling plants. The result exceeded his most sanguine expectations, for he raised upwards of five hundred seedling Chrysanthemums, which were purchased by Mr. Chandler, of the Vauxhall Nursery. There are many persons who remember the *éclat* attending his annual November exhibitions, especially when the Jersey seedlings became known, for not only were the flowers more beautifully incured, but many were more double, and showed far greater diversity of colour than those already seen; among them were Adventure, Beauty, Calypso, Celestial, Champion, Chancellor, Countess, Defiance, Eclipse, Elegance, Eucharist, Formosum, Goliath, Hero, Imperial, Invincible, King, Lucidum, Magnet, Marquis, Paragon, Surprise, and Topaz. Several of these still remain as favourites in the conservatory, while Beauty, Formosum, and Lucidum are found in most prize stands of cut blooms.

"In 1838 the author took up his residence at Versailles, near Paris, and finding the climate of that city particularly suited to the cultivation of the Chrysanthemum, he imported from England all the Chinese varieties, besides most of the Norfolk and Jersey seedlings. Shortly afterwards about 250 good French sorts were added, so that in 1840 this collection numbered between 300 and 400 varieties. Upon looking over the list of that year, it does not appear that there were more than thirty with incured florets or petals, and nearly all of these were obtained since 1830. In 1843 seedlings began to be raised in the Nursery at Versailles, and the first fruits of many succeeding years of labour were in

"1844. Annie Salter, Madame Poggi, and Queen of the Yellows.

"1846. Cyclops, Fleur de Marie, and Nancy de Sermet.

"1847. Queen of England, which is acknowledged by all exhibitors of cut blooms to be, both as regards size and perfection of form, the finest Chrysanthemum extant.

"About twenty years ago the Chrysanthemum took its place among exhibition flowers. The first public show of cut blooms was held at Stoke Newington in 1846; this society is the oldest in England, and its annual exhibitions are still among the most attractive in the metropolis. Of late years many similar societies have been established, and at the present time there are no less than twelve in the immediate vicinity of London, besides many others scattered over the length and breadth of the country."

"In 1846 a new era commenced in the history of the Chrysanthemum, for at that time Mr. Fortune brought from China two small-flowering varieties, known as 'The Chusan Daisy and Chinese Minimum.' These were similar in size to those now called Liliputians, and were probably varieties from the true *C. indicum* of Linnaeus, or *Matricaria japonica* of Kœmpfer, a plant of which (as previously noticed) grew in 1764 in the Botanic Garden at Chelsea. These would in all probability have shared the fate of their predecessor had they remained in England, for although Mr. Fortune admired them in Chusan, they were considered too small and insignificant for English taste. The French opinion of them, however, was far different, for immediately upon their introduction in 1847 into the already well-known collection at Versailles, the little Chusan Daisy became a favourite. From these two varieties have sprung all the Pompons now in cultivation. Chinese Minimum was a dark

double flower, and produced but little seed; while the other, with its daisy-like semi-double flowers, seeded freely the first year, and the result surpassed the most sanguine expectations; the seedling flowers being more double than the original, and from their compactness and resemblance to a rosette, received the name of 'pompon,' and were called Pompon Biou, P. Chapeau Rouge, P. La Liliputianna, P. Le Nain Bébé, P. Petit Poucet, and P. Tom Pouce."

GARDEN PESTS.

THE gardener is, in one respect, the most unfortunate of men, for he has enemies in the earth, on the earth, and under the earth. No wonder, then, that one of his most frequent inquiries is, How am I to get rid of such and such a pest?

Having myself, in addition to the ordinary number of enemies, an extraordinary number in the shape of birds, I was induced this spring to try Mr. Rivers's plan of protecting Plum trees by worsted. I had the more faith in this remedy from having often used it for protecting Gooseberry bushes from sparrows in winter. I cannot, however, say that it has answered my expectations with Plums. The worsted was very carefully wound round the trees, and the meshes were only about a foot square; but while the trees in an angle near the house were left untouched, those further off were almost entirely stripped. Leaf-buds, as well as flower-buds, were eaten, and the trees no doubt were as much injured as though they had been over-pruned.

For another enemy, the aphid, I have tried many things, but find nothing better than the quassia water and soft soap, as recommended both by Mr. Rivers and Mr. Pearson. Neither this mixture, however, nor any other, will supersede the necessity of constant vigilance. In fact daily watchfulness and syringing with water must still remain our sheet anchors.

As to ants, neither the arsenic and treacle recommended by Mr. Pearson, nor the arsenic and sugar, &c., recommended by others, have ever proved of the slightest use. The ants are not attracted by the mixtures, and their eyes probably see distinctly the grains of arsenic, which to us appear as an impalpable powder. I try to diminish their numbers in my orchard-house by disturbing them in their haunts, and continually pouring down boiling water, but they seem to increase as rapidly as the boiling water kills them.—G. S.

TRITOMA GRANDIS.

By this time there are few who are not acquainted with what one may call the grandeur of *Tritoma uvaria* glaucescens, which as a decorative plant in August and September, and even on to the middle of October, has few or no equals among hardy herbaceous plants. It is equally effective when used either in long-continued lines or as single specimens in mixed borders. Any one who saw the splendid masses of this plant which Mr. Lees had this year at Tynningham in his mixed borders, cannot fail to have been struck with the effect produced.

Tritoma grandis is a plant but very little known, but one which cannot fail to be a great favourite when once its merits are found out. It is a stronger grower than *T. uvaria*, but its great merit consists in its commencing to bloom when the other favourite is past. For several years past we have had it here in great beauty till the end of December. Last year I cut basketfuls of it for decorative purposes the day before Christmas, and this year it is equally fine and late. In colour it is much the same as *T. uvaria*, but throws its immense spikes up to the height of nearly 6 feet sometimes, and not unfrequently it throws out smaller lateral spikes from the main stem.

With *Tritoma grandis* and *uvaria*, this beautiful genus may be had in full beauty for at least five months.

There have been great complaints about *Tritoma uvaria* being diseased, or having become degenerated in England. I have observed no signs of anything of the sort in Scotland; and my opinion is that in many cases the plants are starved in poor hungry soils, and that such is as much the cause of degeneracy as anything else. They like liberal culture, and

delight in deeply wrought soil, with plenty of leaf mould or well rotted dung, and a rather moist soil is better for them than one dry and gravelly.

Clumps of Pampas Grass, edged with *Tritoma grandis*, would be very striking in suitable positions. The flowers of the one would show off the other with great effect, and they both flower at the same season, and delight in very much the same sort of soil. The outline of such a clump would be

devoid of that which may be termed dumpiness, and on that account would not be so likely to offend the eye of those who have set their hearts against all formally filled clumps in any position whatever. However, I am sure *Tritoma grandis* will give satisfaction to all who are required to cut flowers by the basketful after the middle of October, and will well repay any extra attention devoted to it.—D. THOMSON.—(*Scottish Gardener*.)

THE MODERN PEACH-PRUNER. No. 8.

"HARDLY any matter is of such importance in Peach-pruning as a right knowledge of the distinctive characters of the shoots. That they differ widely is certain, therefore any instruction on this point must be founded on some common principles before it can be of real value. Even the practised pruner is instinctively guided by certain well established rules in his selection or rejection of the coming season's wood, but these rules are the result of longer experience than usually happens to the amateur. The almost entire absence of any classification of Peach shoots in the works of the older writers was an essential defect, and rendered much of their excellent teaching practically useless. Possibly this was owing, in a great measure, to the paucity of illustrations common in those days, for without such invaluable aids it seems simply impossible even now to attempt any profitable instruction.

Modern practice, indeed, by a species of reaction, has rather erred on the side of copious illustration joined to minute detail; but the result has been good, the amateur has largely profited thereby, and this alone would have amply justified the new method.

There is, then, no classification of Peach shoots of any value till we take up Professor Dubreuil's late work on the general subject of fruit culture. Taking, then, this high authority for our basis, we can the more readily approach this interesting portion of our subject.

Under M. Dubreuil's system all shoots are divided into six distinct classes. After careful consideration this number has been extended to eight, and the whole has been rearranged in two divisions. The first four classes are mainly found in long pruning, while the remaining four, though occurring also in that system, are principally to be found in close-pruning, and especially in all orchard-house work. This division is also convenient for reference. Every type of shoot which occurs in ordinary cases will be found ranged under one or other division. To show the unaccountable neglect into which this matter had fallen, it will be enough to mention that new names have been given to several of the classes, which, though well known to pruners, had no recognised nomenclature. These names have been added under the sanction of the best authority, while the shoots themselves have been carefully drawn from nature by practised hands. They possess the additional value of being

now engraved for the first time of the natural dimensions, by which means they can be much more readily distinguished.

1st DIVISION OF PEACH SHOOTS.

I. THE WOOD SHOOT.—Fig. 1, is the wood shoot of the purest type; *rameau à bots*, of Dubreuil. This is a vigorous class, and indicates either a very early stage of development, or, if found in the case of older trees, rather a superfluous amount of sap. It is depicted with the leaf-buds just elongating under the influence of the continuous movement of the ascending sap, exercising an almost mechanical pressure at their axils. Under the powerful influences of light and heat, in a short time each of these buds will become a green shoot provided with leaves, which, elaborating the sap, will speedily augment the dimensions of the whole, both in length and in breadth. This class of shoots is common on young and growing trees. When it occurs as an extension, it is far better to endeavour, by judicious summer-stopping of the buds A, A, A, as they lengthen into shoots, to make them fruit-bearing, and then little or no shortening-in of the extension will be needed at the winter pruning. The tree will thus gain much. A contrary practice will end in producing other wood shoots of No. 1 class, arising from the buds A, A, A. Whenever this unfortunate circumstance occurs, then these wood shoots should be cut very short back to try for fruit again. Of course, it is not supposed that this class of shoot should be laid-in for bearing purposes at the winter pruning. It is naturally a long shoot, and has

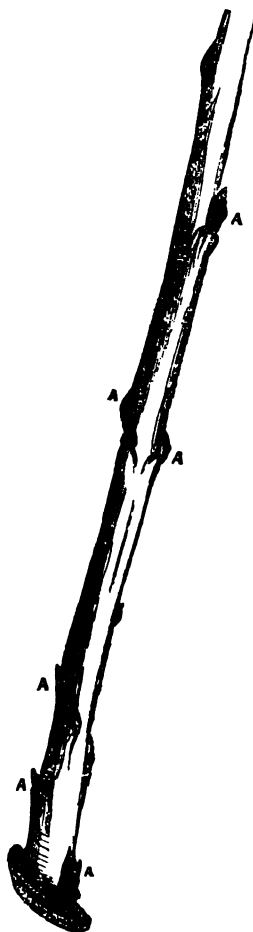


Fig. 1.

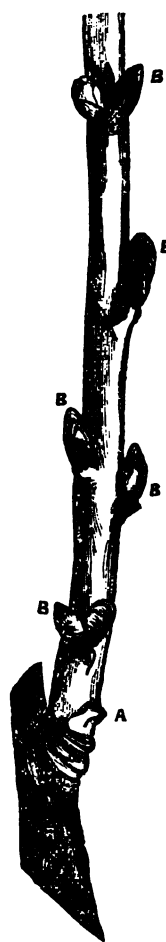


Fig. 2.

occasionally some feeble blossom-buds near its extremity, which are valueless. At the lowest A (at the junction of the one and two-year-old wood), we perceive a wood-bud, which will probably become a short, fruit-bearing spur.

2. THE FRUIT SHOOT. *Rameau à fruit proprement dit*, Dubreuil.—Fig. 2, is a type of the ordinary fruit-bearing shoot. This shoot is a good specimen of the long-pruning style. The blossom-buds at B, B, B, are all double, and have a leaf-bud between them. Sometimes they occur as a single blossom-bud and a single leaf-bud. This formation is easy to manage and is variously treated. Sometimes the shoot is laid-in at full length, a reprehensible practice except in the case of exhausted trees where leaves principally are wanted, and sometimes, being cut back to about 10 inches, it is partially disbudded, which seems a waste of material. This class, however, will bear much ill-treatment, chiefly

as it can hardly be cut-in wrongly, as there is a leaf-represent with each group of blossom-buds.

THE MIXED SHOOT (fig. 3). *Rameau mixte*, Dubreuil. This class partakes of the characters of Nos. 1 and 2,

the leaf-buds of the formerly frequently doubled, the way up, and then going into the fruit-bearers peculiar to No. 2. It takes a stronger growth class No. 2, and is produced to a vertical position on the upper side of some branch, or an extension of some tree. Perhaps a cold wet spring, abruptly succeeded by a hot sun has altered its character and caused blossom-buds to be produced high up on the shoot. These changes are, however, subject to laws not fully explained. This class requires careful summer hand-pruning and is more difficult to manage than No. 2. At the present season if it presents the appearance here shown, it should be well to cut it in short, and thus divide it. If it is long so as to bear leaves, long pruning, and not be recommended here. If it is an extension it is, however, better to leave it.

THE GROSS SHOOT (fig. 4). *Rameau épais*, Dubreuil.—This is a vigorous class, and it should be permitted to appear as an extension. It is a variety of the ordinary shoot, but frequently becomes very much stronger. It is a developed lateral summer growth, which are "anticipés" (literally premature shoots), by the name. These summer laterals are the bugbear of close pruners, for on careless management or misadvice depends the character of their work. We notice the leaf-buds are generally not so prominent as in

class 1; and on the laterals, in the case of that on the right, the leaf-buds are double and well placed at the insertion of the lateral on the parent shoot, and therefore no blank space will appear when these laterals are transformed into fruit-bearers.

In the case of the left-hand lateral, however, these two leaf-buds are suspiciously distant, and the dormant bud visible at the base cannot be depended on, and if not developed during the ensuing season probably never will be. This is a peculiarity of the Peach, therefore the right-hand lateral is of much greater value than the left-hand one. At B B we notice feeble blossom-buds, with a terminal bud, c. These laterals vary considerably in size, of course. In mid-France they become independent shoots and able to bear, owing to the growth made under those favourable conditions. No. 4 should be checked whenever not needed. It is known by its erect character, darker colour, and well-developed leaves, and should be stopped to about 2 inches when it has made about 6 inches of growth. It will then divide into two weaker shoots of some class or other, generally of No. 1, and become manageable. The anticipés, or premature shoots, require a chapter to themselves, and will be further discussed when we come to close-pruning.

These four classes have much in common, as No. 1 easily passes into No. 4 according to circumstances. No. 2 is the highest organisation of course, and No. 3 a class only of a mixed character. More need not be said at

present on this head, as these shoots will have to be referred to continually.—T. C. BRÉHAUT, *Richmond House, Guernsey*.

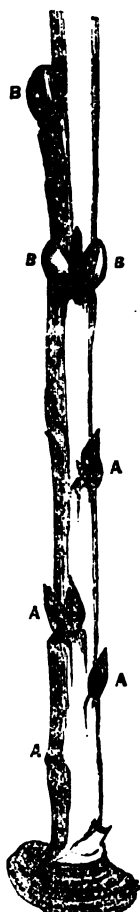


Fig. 3.



Fig. 4.

WORK FOR THE WEEK.

KITCHEN GARDEN.

The present dry weather is particularly favourable for destruction of weeds, and it should be remembered that destroying one weed now is destroying what would be the parent of many. The same may be said of beans, earth-up the early crops, and where they are out in the ground in the end of last year they should be between with a fork. Make another sowing. Cauliflower, raise the hand-glasses and loosen the soil between plants, and afterwards give them a good soaking with water. Cucumbers, the young plants intended for frames to be stopped and repotted if they require it. Plant the plants in the frames early in the afternoon, but up. Water liberally round the sides of the frame the heat of the day dries the soil. Lettuces, water if necessary, and plant out some of the plants in the frames. Melons, the plants very often show two fruit at an early period of their growth, these should be picked off, as they would prevent the swelling of the fruit. The vines should first nearly fill the frames, and several fruit should be impregnated at one time. Air and water according to the state of the weather and the heat of the bed. Peas, make another sowing of two

or three different kinds, according to the consumption of Potatoes, hoe between the early crops as soon as they are above ground. Where circumstances have prevented the planting of the main crops, it should be done at the earliest opportunity. Scarlet Runners, the first crop may now be sown in boxes, which may be placed in any of the forcing-houses. Turnips, where there are any growing in frames they will require watering in dry weather, which will prevent them from becoming hot and hard. Spinach, make another sowing, attend to the thinning of the early crops. Continue to trench into the soil all refuse vegetable matter, as advised in former calendars, a practice which cannot be too much insisted on. It is better to do so at once than to lay it in heaps in the rubbish-ground, where it not only loses its most fertilising properties, but poisons the air by the gases evolved in decomposition: whereas if trenched into the ground at once, and more particularly if accompanied by a portion of charred material, the greater portion of the ammonia will be retained in the soil, till again taken up in combination with water by the roots of the plants.

FRUIT GARDEN.

See that plantations of Strawberries are free from weeds. Those plants that have been forced may now be planted in

ground thoroughly prepared by trenching and manuring—say in rows 2 feet apart and 1 foot asunder in the rows, and watered occasionally should the weather prove dry. By attention to this early and strong runners may be obtained, which will form strong and well-matured plants in early autumn, leaving them ample time for rest before the forcing season commences. Examine frequently grafts, removing on every occasion the wild shoots. Search for and destroy caterpillars which frequently commit serious injury to the young shoots. Continue moderately the disbudding of Peaches, Nectarines, and Apricots. When Vines have pushed sufficiently to distinguish the fruit-bearing shoots, let all superfluous ones be immediately removed. The blossom of Peaches and Nectarines is so thick that I should suggest the propriety of removing a portion, but perhaps it may be said, Let us wait and see what frost will do, as it seems very much inclined to postpone its departure.

FLOWER GARDEN.

The flower-beds should be dug and fully prepared for the reception of the usual summer plants some time previous to planting. Finish, if not already done, the pruning of those summer Roses which were left unpruned for the purpose of retarding their bloom. Insects, especially the green fly and Rose caterpillar, will now be making their appearance amongst the Roses. Pay due attention to Ten-week Stocks, Asters, and Marigolds. If not already done, hardy annuals should be sown after the first shower, and do not forget plenty of Mignonette, the fragrance of which will always render it a favourite.

GREENHOUSE AND CONSERVATORY.

See that climbers and all plants of rambling habit have due attention in regard to stopping, water, &c. Camellias forced into wood should have a trifling check as soon as the young leaves have attained their full size. This is best accomplished by diminishing the supply of water at the root. Continue, however, to shade and syringe morning and evening. Pelargoniums and Calceolarias must be kept moist and free from the green fly. A few cuttings of the first may be put in for autumn flowering. Syringe occasionally Camellias, Rhododendrons, and Indian Azaleas after flowering, and shade from the effects of bright sunshine. Continue to pot off Dahlias.

STOVE.

See that growing Orchids have due attention as regards shading and atmospheric moisture. Recently imported Orchids require very cautious treatment. Water is out of the question here, they will rot directly. A moderate temperature should be used; 60° will suffice at first, and coming out of darkness they should have a very moderate amount of light. Attend to training the shoots of stove twiners as they advance, and do not allow them to become entangled before giving them attention; also attend to the training and stopping of other plants, and afford free-growing subjects plenty of pot room. Achimenes and Gloxinias, filling their pots with roots, will enjoy an occasional watering with weak manure-water. Repot and propagate Begonias. Persevere in keeping down insects which, if allowed, will now progress with great rapidity.

PITS AND FRAMES.

All that can safely be done in the way of hardening off stock preparatory to its being planted out is to give as much air as circumstances will admit without injuring the plants, and to place Calceolarias and the strongest Verbenas in turf pits, where they can be securely protected at night and sheltered from drying winds; and such things, when removed to cold pits should be planted in light soil, which will save trouble in watering, and be much better for the plants than keeping them confined in small pots. Tender annuals that have been raised in heat should be pricked out in light soil, under glass, in order to have them strong before planting-out time.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Our lots of Asparagus, the warm rains having brought it up fast and tender. What was planted lately is also coming up well. There were some ashes and charred refuse over all the

young plants, as a reminder to slugs that they are not wanted. As yet they have not shown themselves much this season. The long winter has either killed many or made them burrow deeper; but if the latter, we may expect the warmth to bring them to the surface, to afford some exercise for watchfulness. The best method for keeping them away is constant surface stirring. The best baits for enticing lots of them to congregate are greased cabbage leaves and a small handful of brewer's grains; but to catch them when thus luxuriating you must go to the leaves and grains with a lantern when other people are in bed. Some of the best kitchen-garden cropping we ever saw was at Bicton; but, then, who ever caught Mr. Barnes asleep? We have heard a tale of one of his young men, who was resolved to have the honour of awakening the veteran, actually sitting up until the short hour had struck, and then on calling him being discomfited with the reply, "I have just got my coat to put on." Few men possess such an iron constitution, and even he may be unequal to such wear and tear now. Gardens, however, will soon tell a tale if managed entirely by six-o'clock men.

Watered Cauliflowers under hand-lights with manure water. Cut pretty well the last of those that were grown in largish pots in winter; but now Broccoli is coming in freely, and, therefore, we can do very well till the first under glasses come in. Planted-out more, and pricked out those spring-sown. From this time until the middle of July we generally sow a pinch of seed every fortnight, as we find it best to plant often and but few at a time, in order to secure a constant supply of fine young heads. The larger spring planting affords plenty for pickling, &c. To avoid placing Kidney Beans in vineries, &c., cleared a part of a pit, where there is a hot-water pipe, and top-dressed the pots with old Mushroom-dung, and then plunged the pots in a bed of leaves, so as to lessen watering. The roots may run in the leaves as they like. Sowed also a lot in four-inch pots, part of which, when the plants are stubby and the points picked out, will be planted in earth in a similar pot, and put in an earth-pit with protection in severe weather. Sowed, also, a border for the first crop out of doors. Cleared most of the Radishes from the Carrot-frame to give air and light to the latter. Pricked-off Celery into boxes and pots; did the same with Chilis, Capsicums, &c. Banked-up Cucumber-frames. Hardened-off Potatoes in frames that we may shortly use the glass for other purposes. Planted some more Rhubarb, and divided that which had been forced in the Mushroom-house. If Rhubarb seed is now sown in well-stirred rich soil it will make strong roots by the autumn. Plenty of Rhubarb, Sea-kale, and Asparagus in winter, with some blanched Swedish Turnip-tops, enable the gardener to give a variety. Earthed down the last piece of a Mushroom-bed, which we will have in the house this season. For this bed we used soda 1½ inch thick, the grass side downwards, and a little loam in the interstices and scattered over all. We have done so often before, and though the produce was good, we did not think the crops were finer than from soiling over in the usual way. Our last summer's bed under the thatched shed, open on one side, is even now doing well. It was mostly uncovered in winter, and we were wheeling the remains out for flower-beds, but we thought the spawn was sufficiently fresh to do more work. A part, therefore, was cleared on the surface, watered with manure water at about 75°, and covered over with dry hay and a little litter, and now it is white with Mushrooms. The bulk of that bed was made with stubble and litter, with a casing of droppings on the surface. It is of no use, therefore, being so excessively particular about materials. We like droppings from the horse and a portion of litter best.

FRUIT GARDEN.

Proceeded with tying and nailing out of doors. The warm rains have given a start to Strawberries, which are beginning to show. Those in pots are now doing well, and swelling and ripening freely. When much is done in that way, a Strawberry-house should be provided for them. In vineries &c., where the roof is nearly covered with foliage, the Strawberry plants will swell their fruit, when set elsewhere, but they will neither have the colour nor the flavour of those exposed to the full action of the sun. We are often nonplussed what to do with them, so as to keep up a good succession at this season, the houses where there is heat getting too shaded and crowded for them, and shelves at

the back of pits, where Cucumbers, Melons, and Beans are growing being rather too damp, even with a little air on all night.

We notice what is said of *blind Strawberries*, at page 304, and so far endorse "W. Y.'s" remarks. It is much the safest plan to take runners from plants that have bloomed. In early forcing many plants come blind owing to the bud being starved by excessive dryness, or rotted by an excess of moisture. In all such cases the plants will bloom well enough if planted out, and often give a crop in the autumn. Those that never had a flower-bud, but show strong-pointed, sharp-angled shoots, had better be thrown away. Sometimes, however, on marking such plants we have found them become fruitful the following season. It is best, however, as we have several times remarked, to choose runners from fruitful plants. Plants that are barren are generally much stronger-growing than the fruitful ones, and produce stronger and earlier runners, and unless precautions are taken these will be apt to be taken off or layered by an inexperienced workman.

One other fact we may mention. Owing to the dryness last summer, our plants of British Queen were very small, so much so, that we put three plants into a seven-inch pot, firming them at equal distances round the side of the pot. Several persons noticed these plants in winter and spring, they were so weak, and we were not very hopeful of them ourselves. They are, however, doing remarkably well, throwing up large broad trusses of bloom and fruit, and the foliage is so strong that we have bent it a little over the pot to give more room to the flower-trusses. Such small plants, if the buds are well ripened, often do wonders, and beat larger plants if not equally well ripened.

Planted-out *Melons* in a frame and pit, the latter heated by hot water. In both cases the space appropriated to soil is about 24 inches wide, and the same in depth. We find this quite sufficient for a bed 5 or 6 feet in width. We have several complaints of scorching and injury from steam owing to the shallowness of the frames. Our frames are shallow, from 9 to 11 inches deep in front, and from 14 to 18 inches deep at back. To save labour, as soon as the hotbed settles and the heat rises, and the top material is sweet, we take the above-sized trench out of the centre and lay the soil back and front, placing some old slabs, if we can obtain them, on each side of the trench. The soil is then put in, the frame set on, the soil being entirely below the level of the frame, a little earth is put over the two sides, and some is firmly placed all round the box. The soil in the middle is soon warmed, the less thickness of dung in the centre prevents over-heating at the roots, and as the frame requires no moving or elevating afterwards, there is no risk of unhealthy steam getting in from the linings.

Disbudded shoots in orchard-house. Cherries in pots are now a fine sight with bloom, and Plums also; the latter are beginning to set. Gave a soaking to that part of the border not previously watered. Use manure water freely now for border and trees in pots, but considerably diluted, so as not to be too strong. Thinned out shoots, and tied in the Peach-house. The roof, being at 45°, is the steepest we have, and the best place we have for Strawberries. Three or four rows, however, shade the Peach trees rather much, but we must keep them a little longer yet.

Regulated Vines, and proceeded with thinning Grapes in dull days and early in the morning. The late vinery that had the shoots suspended some 30 inches from the glass has broken very freely, and we must now shut up and keep going slowly. There has lately been air on all night, and as much as possible during the day, and the canes never had a sprinkling of water over them. In early houses we generally moisten the canes before they swell and break their buds, but it is of little importance doing so in late houses. After the Grapes are set we syringe no more, but keep the floor and pathway rather damp until the Grapes ripen.

We saw a nice vinery the other day, which belongs to John Hawkins, Esq., jun., near Hitchen, one peculiarity of which relieves it from the monotony generally prevalent in vineries. The vinery had been built, planted, and some time cultivated by the late — Ransome, Esq., who was quite at home in all such matters. The vinery stands on a lofty knoll, with the ground falling from it all round. It is span-

roofed, with glass at the sides nearly down to the ground. The peculiarity is that the Vines have been planted in the centre of the house, grow up in bush fashion to the ridge, and then occupy about a yard of the roof on each side of the ridge. Vines are also planted at the sides so as to run along the sides, leaving an opening on each side of the roof for from 4 to 5 feet in width, so that the sun may reach the bottom, next the floor, of the central Vines. The effect is very pleasing on entering the house. The fine healthy-looking Vines had good bunches 2 or 3 feet from the ground, as well as at the top and in all the intermediate places. We suppose to make the Vines break uniformly at first, the stems from the ground to the ridge had been twisted something in corkscrew fashion. The furnace and boiler were fixed at the north end, and this end was occupied by a brick wall. The chimney goes through this wall. From against it a bunch of ripe Grapes had been cut, and one or two bunches of Hamburgs were colouring, and some bunches of Sweetwater were nearly ripe, whilst the bulk of the crop will not be ripe for something like six weeks, unless a strong heat be kept up. The wall makes what would have been the coldest end the warmest. Dry flowers of sulphur were laid along the pipes. We think some amateurs would prefer growing Vines in this manner in span-roof houses to having them suspended under the roof in the usual way.

ORNAMENTAL DEPARTMENT.

Very much the same as in previous weeks. Finished pruning Roses. Mowed, rolled, dug beds and borders, lined walks, borders, &c., with edging-iron. Cleaned walks in kitchen garden. Potted, planted out in temporary beds, and put in the last batch of *Verbena* cuttings, placing them at once in light soil in a frame, with a little heat beneath them, &c.—R. F.

COVENT GARDEN MARKET.—APRIL 22.

The supplies of home-grown vegetables are now abundant, and importations from the continent are heavy, but not by any means in such good condition as formerly, owing to the heat. A few dessert Apples and Pears are still to be had, also good new Grapes. The Potato trade continues dull.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	$\frac{1}{2}$ sieve	2	0	to 4	0	Mulberries	punnet	0	0 to 0
Apricots.....	doz.	0	0	0	0	Nectarines.....	doz.	0	0 0 0
Cherries.....	lb.	0	0	0	0	Oranges.....	100	6	0 14 0
Chestnuts.....	bush.	14	0	30	0	Peaches.....	doz.	0	0 0 0
Filberts.....	100 lbs.	40	0	0	0	Pears (kitchen) ..	bush.	8	0 12 0
Cobs.....	doz.	50	0	60	0	desert.....	doz.	3	0 10 0
Gooseberries ..	$\frac{1}{2}$ sieve	0	0	0	0	Pine Apples.....	lb.	10	0 14 0
Grapes.....	lb.	15	0	25	0	Plums.....	$\frac{1}{2}$ sieve	0	0 0 0
Lemons.....	100	5	0	10	0	Strawberries.....	oz.	1	0 1 6
Melons.....	each	0	0	0	0	Walnuts.....	bush.	14	0 30 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artichokes each	0	4	to	0	6	Leeks bunch	0	3	to	0	6
Asparagus bundle	4	0	7	0	0	Lettuce per score	1	6	2	6	0
Beans Broad $\frac{1}{2}$ sieve	0	0	0	0	0	Mushrooms pottle	1	6	2	6	0
Kidney 100	1	6	2	0	0	Mixed & Cream, punnet	0	2	0	0	0
Beet, Red doz.	2	0	3	0	0	Onions bushel	5	0	7	0	0
Broccoli bundle	0	0	0	0	0	pickling quart	0	6	0	0	0
Brussels-sprouts $\frac{1}{2}$ sieve	1	6	3	0	0	Parsley $\frac{1}{2}$ sieve	1	6	2	6	0
Cabbage doz.	1	6	2	0	0	Parsnips doz.	0	9	1	0	0
Cauliflowers 100	0	0	0	0	0	Peas quart	10	0	15	0	0
Carrots bunch	0	7	0	10	0	Potatoes bushel	2	6	4	0	0
Cauliflower doz.	2	0	6	0	0	Radishes doz. bunches	2	0	3	0	0
Celery bundle	2	0	3	0	0	Rhubarb bundle	0	3	0	6	0
Cucumbers each	0	6	2	6	0	Savoy doz.	2	0	3	0	0
Endive score	2	6	3	0	0	Sea-kale basket	1	0	2	0	0
Fennel bunch	0	3	0	0	0	Spinach $\frac{1}{2}$ sieve	1	6	2	6	0
Garlic and Shallots, lb.	0	8	0	0	0	Tomato $\frac{1}{2}$ sieve	0	0	0	0	0
Herbs bunch	0	3	0	0	0	Turnips bunch	0	3	0	6	0
Horseradish bundle	2	6	4	0	0	Vegetable Marrows doz.	0	0	0	0	0

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

FLOWER-GARDEN PLAN (T. R.).—We will have the plan engraved, and publish it next week with a brief notice.

ORCHARD-HOUSE (Ignoramus).—Why did you write to Mr. Fish notwithstanding our published notice? You may find some information in "Doings of the Last Week."

FLOWER-BEDS (J. N.).—We should prefer pairing such beds with the same planting and if the beds are more than 4 feet in width they would tall well edged. If the gravel is so light, however, dark colours should predominate for edgings.

VINE LEAVES (Beeborough).—The leaves should have been sent at least in tissue paper. We found no disease upon them, and but little of the warts which are generally the result of the house being kept damp and the roots wet and cold. The shrivelling you speak of we would attribute to want of root-action. Have you examined the stems and roots to see that they have not been nibbled by mice? We once had a Vine or two of which the leaves shrivelled, and we found the stems nearly severed by mice. Even for warts sulphur would do no good.

CONSERVATORY ADJOINING DRAWING-ROOM (Hazelbourne).—If your back wall faces the south you will not have shade enough for Ferns. You might have them on the two sides, where you propose plunging your pots, if there were more shade there. A pretty mode would be to throw these sides into irregular little hillocks for Ferns, and cover the ground with Helvetic Moss, and have an elevated vase or two. We think for such a house as yours we would prefer large vases with creepers hanging from them, and the plants in the vases might be in pots, to permit of changing them often. This would be more artistic than plunging in borders. If the latter should be decided on we would prefer moss, and plants of Helvetic Moss could be grown to cover the other Moss as soon as the plunging was done. The climbers we recommend are *Pasiflora coriacea*, *Pasiflora racemosa coriacea*, *Tecoma mollissima*, *Bignonia Chirera*, *Habrothamnus elegans*, and *Kennedy's Maryatiae*.

INSECTS ON STRAWBERRIES (R. Wintle).—After examining the bits of Strawberry leaves we thought we found one young, white, red spider, and there seemed also traces of thrips. The leaves should have been wrapped in something to prevent the insects escaping. For plants in bloom put sulphur on the heating medium, so that the sulphur may not be heated above 165°, and as soon as the fruit is set syringes well with clear root water. Need we say that it is useless to set expecting a reply for the first Tuesday, when all the Number was printed before your inquiry came to hand? Friends who want answers in a hurry should write early—as soon as the previous Number is out.

TWELVE ZONAL GERANIUMS FOR POT CULTURE (J. T. X.).—*Diadem salomon* and white; *Eve (Bull's)*, pink; *Editor (Bull's)*, scarlet; *Cilpiner (Bull's)*, scarlet; *Madame Rudersdorf*, salmon; *Attention*, scarlet; *Mrs. Martin*, orange scarlet; *Paul l'Abbe*, rose; *Lord of the Isles*, scarlet; *Herald of Spring*, scarlet; *Ossian*, bright magenta scarlet; *Henri de Beau-dout*, white and carmine. Best white-flowered of the same class are *Madame Vaucher*, *Madame Barillet*, and *Snowball*. Geraniums with crimson in the markings, *Mrs. Pellock*, *Mrs. Benyon*.

SOWING PEAS (A Beginner).—It would be better to sow the late Peas midway between the rows than a foot from the Sangster's No. 1, which will do fairly for Lord Raglan, and even British Queen. They will not do so well between the rows of Veitch's Perfection, as it comes off some weeks later than Sangster's No. 1. In no case will they do so well as if sown in the open uncultivated ground. They will be inconvenient, and liable to become drawn.

RHODODENDRON EXIMUM (G. P. C.).—It is a garden variety. It is not scarce, but has only flowered as yet in a few places. It is a free bloomer, and being an early bloomer is best adapted for greenhouse or conservatory decoration, and though hardy is so liable, as all early bloomers are, to be cut off by spring frosts as to be of little value outside.

DRAINAGE FOR TERRACE WALK (Pembroke).—There are some good articles on levelling and draining in "The Gardeners' Assistant," by Mr. R. Thompson. The more open matter you put in your 20-feet path the better—say from 12 inches deep, and a drain deeper still, and about 10 inches of gravel over all. We have seen walks wear well that had very little openings made for them, some 6 inches of binding gravel put on, a slight fall given towards the sides, and the walk made so firm that all the water was taken to the sides. For lasting work we would prefer one, however, with rough open material below the gravel, and which would never be soiled on the surface.

CROCUSES DONE BLOOMING (V. G. C.).—You may remove the Crocuses, and plant them in the garden in an open situation, for out-of-the-way corners are not suitable for ripening the bulbs. In removing them do not disturb the roots, but take up and plant with the soil adhering to the roots. It will not do to take them up and store them away in sand, for that would so weaken them that they would not bloom for some years, or very likely destroy them.

LOBELIA SPECIOSA AND AMARANTHUS MELANCHOLICUS IN BOXES (Idem).—Your Lobelia will do very well placed on shelves against a wall protected at night with matting. The *Amaranthus* should, after being pricked off, be kept in doors until the middle of May, when it may be hardened off like the Lobelia. It is too late to sow Lobelia speciosa under a hand-glass, and have it strong for planting out. It will not bloom until very late. To bloom well it requires to be sown early in heat.

BOXES FOR CLIMBERS (C. E. H.).—Neat boxes of slate or wood from 24 to 30 inches square, and as much in depth, will answer very well for climbers to cover your house side, if properly drained and well watered in summer. The outside of the boxes, especially if of slate, should be of a light stone colour. Wistaria and the Roses you mention will do.

LILY OF THE VALLEY-BED (Idem).—Lilies of the Valley should not be quite shaded, but they will do on the north side of a wall. Strong loam is the soil they like best, but they will grow in every kind of soil, though sometimes they refuse to thrive in a soil; but you cannot know this without trying.

REMOVING GREENHOUSE (Sigma).—Brickwork such as you would require for setting a boiler, and forming a chimney, are not removable without the landlord's consent. But all the glass work of a Paxtonian or other greenhouse structure may rest merely on a layer of bricks, and may all be removed at any time. Such a structure might be heated by a gas or other movable stove, with an iron tube for chimney, which would also be removable.

GLASS FOR PEACH-HOUSE (S. B.).—We have never tried Peaches under fluted glass. We have seen them flourish under rough plate. We would, however, prefer clear glass ourselves. We wish that some of our readers who have tried fluted glass would detail their experience. We have seen fluted glass do well under thick ribbed glass.

FUMIGATING (A Connaught Man).—You must fill the house with tobacco smoke on a calm evening, the ventilators being closed, and the foliage dry. Fill it so full that a plant cannot be seen through the glass from the outside. Put a few red hot cinders in a pan or flower-pot, place the tobacco dry over it, and stand the pot on an inverted pot. It will slowly but surely burn, and fill the house with smoke. If the house is large, two or more pots may be necessary. Do not open the door, nor let out the smoke. It will let itself out quite soon enough. The tobacco will burn quite fast enough without salt-petre; but you may, as you have no bellow, dissolve a tablespoonful of salt-petre in a pint of water, and steep brown paper in it until thoroughly wet, then dry it, cut it into pieces a foot long, and 6 inches wide, and roll these up lengthwise leaving a hollow space of half an inch or so in the centre, which is to be filled with tobacco. Twist one end and insert that in a flower-pot or in the soil, then set light to the other end, and it will burn out gradually. A number of these rolls will be required to fill a house according to its size.

MELONS FAILING (Idem).—Judging from the details which you have given, we should imagine that the leaves were scorched for want of air sufficiently early, though air need not be given so early as when the sun first shines on the glass. We never found it necessary to give air much before 8 A.M. Bright weather following a continuance of dull weather is the only time when Melons are benefited by shade, and then it should be slight. Four plants are not too many for a frame 6 feet 4 inches by 6 feet, though quite sufficient. Particulars of Melon culture, sufficient for every practical purpose, were given in our last volume.

VEGETABLE MARROW AND RIDGE CUCUMBERS (Idem).—Your situation is a bad one for both, but they ought to do better. You sow too early, and the plants become stunted in growth ere they are planted out. They ought to grow away from the seed without receiving any check. The middle of April is quite soon enough to sow the seed. When up put two in a pot, and when established remove to a cool house or frame, planting out in the second or third week of May. Dig out a hole and fill it with a good barrowful of hot dung, and cover with 6 inches of soil; place the hand-glasses over the hills, and plant out, keeping close and well watered for a few days, then gradually admit air by tilting the lights, and as the plants grow raise the lights so as to allow the shoots to run outside. Remove the lights altogether in June, after they become well established, or by midsummer, and water copiously in dry weather.

GRAFTING ORANGE TREE (Assau).—You may graft the Orange tree during this and next month; the best time being when the stock begins to grow. The most certain mode is inarching, and the next tongue or whip grafting, leaving the base of the graft so long beyond the point of union that its end may be placed in a vial of water. The best variety yet introduced for eating is the Tangierin, and it does well in a cool greenhouse. We were unable to tell from the small leaf sent, whether the tree is an Orange or Lemon, it being a miserable fragment, but the stock whatever it be will do.

REGULATING TEMPERATURE (S. M. L.).—The easiest and cheapest plan by which you can regulate the circulation in the greenhouse connected with your stove, is to procure two small elbow pipes, made of zinc, galvanized iron, or tin, so that the outside of this short pipe shall just fit into the inside of those which you now have. The pipes may be 7 or 8 inches long each way, and the one end should go into the pipe, and be fastened securely there and made water-tight with paper and white lead, or white lead and tow, the other end standing upright, and these upright pieces should be fitted exactly with wooden plugs. Nothing can be more simple. You may have the upright part of this pipe even higher, and then when you want no heat in the greenhouse, you may have the water only high enough for the flow in the stove. If you liked you could regulate the heat in the stove in the same way. If the flow from the cistern had proceeded from the bottom, it would have been easier still, only blocking up the holes where heat was wanted. Without any pipes you might have an elbow wooden block with the upper and high enough to move the lower end out and into the pipe. It must fit the pipe exactly at the outside; but a small opening, by pulling the plug a little out, will give plenty of circulation. A tap with a hammer will make all right when no circulation is wanted. A simpler arrangement at first would have saved all the trouble.

PROPAGATING CONIFERS BY CUTTINGS (C. E. H.).—A large number of Conifers may be increased by cuttings. The first week in May is a good time for putting the cuttings in; they should be cut slanting through the joint, not straight across as cuttings are generally made. By cutting them in this way it leaves a much larger surface from which roots can be emitted; the cuttings may be from 2 to 7 or 8 inches long. Prepare a mixture of peat, leaf soil, loam, and silver sand in equal proportions, place 2 or 3 inches of broken bricks in the bottom of the cutting-pans, then fill the pan up to within an inch of the top, taking care to press the soil in firm. Fill up the remaining space with sand, make this firm by pressing it down with the bottom of a flower-pot. Care should be taken in putting in the cuttings to press the soil firmly about them, and the base of the cutting should rest on the bottom of the hole made by the dibber. After the cuttings are put in they should be well watered to consolidate the sand about them; they should then be placed in a close frame where no sun can shine on them. Keep them close for six weeks or two months, only taking the lights or bell-glasses off for a few minutes to sprinkle them, or for the purpose of cleaning the glasses. The pans most suitable for the purpose are those about 9 or 10 inches deep.

AQUATICS FOR ARDEN POOL (Roley).—For the deepest parts, Nuphar lutea, pumila, and advena; Nymphaea alba, milida, and reniformis; Victoria cordata, ovata, and nymphoides; Rumex hydrocorydalis; Typha latifolia; and Iris pseud-acorus. For the shallower parts, Richardia scutellaria; Allium plantago, natans, lanceolata, and ranunculoides; Calla palustris; Butomus umbellatus; Acorus calamus; Hottonia palustris; Calla palustris, and the double variety; Ranunculus hederaceus, obtusifolius, and aquatilis; Aponogeron distachyon, and angustifolium; Cardamine pratensis, azurea; Sagittaria sagittifolia; Menyanthes trifoliata; Hydrocharis morsus-ranae; Stratiotes aloides; Merriophyllum spicatum, and verticillatum. For the edges, Osmunda regalis; Lobe la Dortmanna; Degeneria arundinacea, and its variegated form; Myosotis palustris, and caespitosa; Veronica beccabunga; Lysimachia thyrisifolia; L. nemorum variegatum; Valeriana officinalis; Lythrum salicaria; Eupatorium cannabinum; Epilobium angustifolium, and hirsutum. We do not know where they may be obtained, but many are British plants, and will in cultivation at the present time, though we cannot name a place where they are grown for sale. Nurserymen should advertise such things.

LIME-MIXED FRAME (R. A. P.).—There will always be danger of the steam from the lining of dung passing through the openings or joints of the loose bricks and injuring the plants within the frame, more or less according to the rankness. To prevent its doing so, the joints of the bricks above the soil inside the frame should be stopped with mortar, leaving the outside unstoppered, which will allow of the heat of the dung passing into the wall, heating the bricks, and heat will be radiated from their surface into the atmosphere of the frame without rank steam. If the heat be very strong, and from fresh fermenting materials, it may be necessary to stop up the crevices on the outside with mortar, to make sure that the rank steam is not passing into the frame. If it does, so to any extent it will materially affect the foliage, and, if very rank, completely destroy the crop. We have known walls built of loose bricks, the inside being pointed with mortar, and then white-washed, answer very well indeed, and give more heat than when the bricks were laid in mortar.

RAISING CARNATIONS FROM SEED (G. E.).—Prepare ordinary seed-pans or pots as follows:—Drain to one-third of their depth with pieces of pot or rough cinders, and on this place one-third more of the rougher parts of the compost, which should be light turfy loam, that from turves a year old being preferable, mixed with one-third of its bulk of well-rotted leaf mould. Fill to within half an inch of the rim, and make the surface even. Scatter the seeds regularly over the surface, and cover with fine soil sufficiently deep to hide them. Water and place in a frame or house with a gentle heat, or falling this under the light of a cold frame, or in a warm situation protected from heavy rains. When fairly up remove to a cold frame if raised in heat, always keeping the soil moist but not very wet, and when sufficiently large to handle put off singly into small pots, or prick them out in a sheltered situation. Keep shaded for a few days until established, and in September plant out 1 foot apart in beds of good rich soil in a sheltered yet open situation. They will bloom next year.

FOSTER'S WHITE SEEDLING GRAPE (A Lady Subscriber).—It is a white Grape, but has not a musty flavour. It ripens in a greenhouse about the same time as the Muscadine, and is superior to that variety. When ripe the skin of the berries is of a clear amber colour. Its blossoms set freely, and the bunches are large and handsome. We know of no reason why it would not inarch on the Black Hamburgh.

SEEDLING TANGERINE ORANGES (An Old Subscriber).—Tangerine Oranges will come true from seed, and, therefore, grafting will not be required. Of course, the seedlings will bloom without grafting, that being only practised to perpetuate varieties. As to the mode in which the operation is performed, see an answer to another correspondent.

MANAGEMENT OF BULBS (J. A. H. S.).—It would not be safe to take your bulbs up before the second week in May; if they are then taken up you may plant them on the spare border in very light sandy soil. As soon as the foliage becomes dry take them up and spread them thinly on a shelf or bench in a dry airy shed let them remain there for a few weeks, then pack them away in drawers or boxes. Primula Calceolaria, and Cineraria, sow at once; Camellia, Azalea, &c., pot as soon as they have done flowering.

PANPUS GRASS CULTURE—CANNAS (H. J. F.).—We should think no better soil could be found for panpus Grass than yours. The situation is also good. The richer you make the soil with well-decomposed manure the better will the plants grow. Plant them out at once. The aspect will suit them well. The same soil and situation will suit the Cannas, only they must not be planted out before the second week in May, unless they are dry roots; that being the case, they may be planted out at once.

ROSE PRINCESS MARY OF CAMBRIDGE (Paul & Son).—It is a beautiful flower, colour pale rose, with a bright pink centre; something in the style of Duchess of Sutherland, but a much fuller Rose. If it maintains its present character it will be a decided acquisition; and as forced Roses are not generally so good as those in the open air, we should imagine that it will be even better by-and-by.—D, Deal.

EVERGREEN SHRUBS FOR BEDS OF LAWN (Amateur).—The outside beds would look very well if planted with dwarf-growing evergreen shrubs. You do not say whether your garden is much exposed, or whether it is a damp soil or dry. If the sub-soil is moist the following would do well:—some of the dwarf-growing kinds of Rhododendrons, Ledums, Azaleas, Vaccinium, Gaultheria, Epigaea, Andromeda, Menziesia, or Irish Heath, Ericas of sorts. Place a few spadefuls of chopped peat or bog around each plant as they are put in. Different kinds of Liliacs would look well if planted amongst them. Herbaceous plants may also be planted with advantage. If it is a dry loamy soil and the situation an exposed one, the following plants would be most suitable for the beds:—Aucuba japonica and some of the newer kind, such as A. japonica formosa, Berberis, or Mahonia aquifolium, Deutzia gracilis, some of the best and most distinct kinds of variegated Hollies, Magnolia conspicua, M. purpurea, Pyrus japonica, white and scarlet, Skimmia japonica, Spiraea callosa, Weigela rosea. These may all be kept as small plants by constantly pinching-in their tops. Standard Roses would look well planted amongst them, their stems would be hidden by the evergreens, the tops would then appear just above the evergreens, giving the bed a very pretty appearance.

MULCHING FLOWER-BEDS—APPLYING LIQUID MANURE TO ROSES (F. C.).—The mulching is applied to the surface of the beds after the plants are put out. An inch or so of short manure placed on the surface checks evaporation, and, consequently, there is less necessity for watering. It affords food to the plants without making them too vigorous, and is not so stimulating as when manure is mixed with the soil. Roses, like all plants, do not like strong applications of manure water. It should be applied weak and at every alternate watering, or once or twice a week during the growing season. We do not know of an edging plant raised from seed that will do in the place of Lobelia.

NAMES OF RHODODENDRONS (Guntton Park).—It is R. Falconeri, one of those discovered by Dr. Hooker in the Sikkim-Himalaya, at an elevation of 10,000 feet above the sea. (Lady L. Coles) Yours is R. Windsorii, discovered by Mr. Booth in the mountains of Bootan, at elevations of from 7000 to 9000 feet.

NAMES OF PLANTS (De Foix).—1, Pteris aquilina; 2, Cyrtomium falcatum; 3, Nephrolepis tuberosa; 4, Litobrochia vespertilionis; 5, Selaginella, apparently caesia. (M. D.).—Pelargonium radula. (W. M.).—Erica (an unnameable scrap); Garrya elliptica. (Eskdale).—Hardenbergia monophylla. (P. S.).—Pittosporum undulatum. It is not hardy. (A. W. C.).—Plants cannot be named from bulbs alone; we must see the flower. (J. K. S.).—Your plants were so carelessly packed that all but one of the numbers were loose when they reached us. No. 3 is Gnidia linberbia. Two others in flower are Primula denticulata and Pittosporum Tobira. The rest not being in flower we cannot undertake to name (Eucharis).—1, Medicago orbicularis; 2, Cornus mas. (W. N. B. and Leighton B.).—It is utterly impossible to name plants from single leaves or scraps of leaves. We might guess at dozens of things and be wrong after all. (W. N.).—1, Pulmonaria officinalis; 2, Muscari racemosum; 3, Lamium maculatum; 4, Leucocymum aestivum.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending April 22nd.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep	2 ft. deep			
Sun. 16	30.160	30.030	69	46	51	49	N.E.	.16	Partially overcast; very fine; rain at night.
Mon. 17	29.925	29.870	71	45	51½	49	S.W.	.02	Slight haze; fine; very fine; rain.
Tues. 18		29.878	69	40	52	49	S.W.	.02	Densely overcast; fine; overcast; slight rain.
Wed. 19		30.106	64	42	53	50	N.E.	.00	Hazy; overcast; fine; overcast.
Thurs. 20	30.172	30.149	67	39	53	50½	N.E.	.00	Very fine throughout.
Fri. 21	30.153	30.058	76	40	54	51	N.E.	.00	Overcast; very fine, with dry air.
Sat. 22	30.118	30.078	78	32	55	51½	N.E.	.00	Very fine; hot and dry air; rather cold at night.
Mean	30.089	30.023	70.57	40.57	52.79	50.00	.....	0.20	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

A DAY AT DEVIZES, AND WHAT I SAW THERE.

My visiting acquaintance among friends of like taste to myself is on the increase, thanks to "Our Journal," which being a centre in which similar rays meet, also brings the rays closer together. This is well; for we fanciers are apt to get smiled at by friends in general, thought peculiar, odd, eccentric, and we are, like all good things in this world, very frequently scattered wide apart: so there is all the more reason why we should meet, and at poultry shows we do, which is one of their many benefits. But it was not a poultry show that brought me to Devizes, but of that presently. "When Greek meets Greek, then comes the tug of war," and when fancier meets fancier, then comes a pleasant hour or two; we are like freemasons, and we understand each other's language. Now the uninitiated vex us,

good-tempered fellows though we be. Thus we are asked to show our stock, and we hear, "What pretty little birds to be sure!" Pretty little birds! that all!—birds with so many properties and distinct beauties! Oh! how blind is ignorance. Or, comes the question, "What is that queer-looking fowl, if fowl it be, with yellow and feathered legs, and odd walk?" "A Brahma cockerel, madam." "Dear me! I have heard of Brahma locks, but never of Brahma fowls. What do you call that poor little Pigeon with a red wart round its eyes, which look inflamed?" "That is my prize Barb Pigeon." "How funny. I have heard of a barb horse before, but never of a Barb Pigeon." But a truce to such friends, let me now tell of a meeting between friends who appreciate, because they understand, the beautiful birds. Now I had been invited by an excellent judge and successful exhibitor of poultry and Pigeons, resident at Devizes, to inspect his birds, especially his turn-crown white Fantails. I accepted the invitation with pleasure. I had never been at Devizes since coaching-days, so scarcely knew

where I was, as a new road cut through a hill had been made to reach the town from the station; indeed, poor "WILTSHIRE RECTOR" might have lost himself (would there not have been lamentation at Hilltop Rectory if he had?); but no fear, as my host kindly met me. A corner is turned and I am once more in the fine old market-place, and I exclaim on viewing that noble space and its surroundings, "What a picture of an old county town is Devizes!" There, before me, stands the monument to Ruth Pearce of lying memory; around are the picturesque houses, here one with a fair Grecian front, there steep gables, some red-tiled and honeycombed gables, such as Gilbert White noticed in *Sussex*; I remember several at Easebourne, that pretty village, dear to me, adjoining Cowdray Park, and lying near the town of Midhurst.

But I am at my new friend's house, and soon we visit the loft, the best place in which I ever saw Pigeons confined. It was the top storey of a very long factory-like building, 100 feet long by 20 wide, with large windows all round, with the sun streaming in—a capital thing for Pigeons, for they delight in sunshine. My eye at once fell upon a red-pied Powder cock of singularly good shape and fine carriage; and soon after upon an old bird, with his crop nice and globular as seen from the back. What a fine loft for Powders, for they can almost unimpeded take their long sweeping flight. Some of them were white, and so owl-like were they that they looked as if they by right were the lawful tenants of the old building. Now for the Fantails: they were, I am happy to say, all white, and very good birds they were. Of the pair of turncrows imported from India, the hen was particularly charming. As she fronted me with her slender head and neck surrounded by the tail feathers, which formed a rayed crown to her head, I own my preference was to the English birds without the turn-crown, as the shape of the Fantail's head does not seem to require it; but there is room for all opinions in the world provided they are harmless. On the floor I was glad not only to see a good water supply and plenty of gravel, but pans for growing green food in. Then I examined the nest arrangements, which, to avoid the possibility of rats, were near the ceiling, thus also causing the birds to take more exercise; also the loft was not marred by the presence of any inferior birds, which is well, for the best eat only as much as the worst. I treble enjoyed this loft from the evident happiness and health of the birds. Round and round we sauntered, I picking out my favourites, and admiring, and criticising.

We descended at last (N.B.—A very long ladder, no gouty foot must venture up). Well, just at the bottom were strutting about some Black-breasted Red Game fowls, very good, and of Fletcher's strain. I am reminded, however, that "dinner waits," but unlike Mrs. Gilpin I cannot add, "and I am tired." Now, after dinner it had been arranged that I should visit two other lofts and poultry-yards; so we cross the market-place and arrive at another fancier's, where I am also very kindly welcomed. The Pigeons had been kept in so that I might inspect them the better. Ah! I know what variety—they are far above me—I hear the merry rattling coo of the Tumbler. Surely a chapter might be written upon the different cooing of Pigeons, as Mr. Dixon wrote a chapter upon the different crowing of cocks. For instance: there is the deep coo of the Powder, who plays the big drum in the columbarian band, then the Trumpeter, then the lively shrill life of the Barb; but of all cooing commend me to that of the cheerful Tumbler. My friend's, a friend in every sense, were in breed the right medium between the coarse-shaped Roller and the (for flight) too delicate Almond, just, in fact, what high-flying Tumblers should be—pleasing near at hand from their trim form, and charming in the air. I at once marked out what I considered the best pair. "Ah! I had those from Mr. Brent:" so "Our Journal" met me at Devizes. By my wish they are let out, and up they go, all save one wise hen, who perhaps will lay to-morrow, and whom no pocket-handkerchief waving can frighten into the air. Up they go—higher—higher—higher. Now they are close together; then one tumbles over clean and clever; then they are all falling in the clear atmosphere, tying knots charmingly; then all up together. While I look, lo! they are all at it again. Certainly high-flying Tumblers are great sources of pleasure. I never could do long without a flight; even among the Grampians

I had my Tumblers. I suppose I must have some again some day.

Next the fowls. Some are in wooden houses fronted with net—White Bantams and Malays. I hear a voice near me saying quietly, "A certain 'WILTSHIRE RECTOR' calls Malays ugly birds." Oh! what a dig in my poor ribs.

"Needles and pins, needles and pins,
When a man writes his trouble begins."

But the stab was given so gently that I winced, but did not either scream or faint; the kind look took away the pain, if pain there were. In a back garden I found a troop of some twenty Malays, and as they charged past me at a quick canter they reminded me of either camels with their necks stretched out and long legs, or some irregular cavalry, say Bashi-bazouks. "I have been a fancier many years," "WILTSHIRE RECTOR." "May you be many more," said I; "Nature never tires;" and I pointed to the garden and greenhouse, and poultry and Pigeons. But I must hurry on to see another fancier, for the railway is an awful despot; time, tide, and trains wait for no man. "Get behind me or walk," growls the engine. Further on into the town, and I found a dull yard enlivened by Pigeons. Then a look at St. John's Church, with its noble tower, and that roof from off which the lead was stripped to mould into bullets when the brave little town was besieged by the parliamentarians. Being on the direct way between London and the west, Wiltshire suffered much in the civil war, and more particularly Devizes. I have a peep into the Town Hall, evidently of the Georgian era; indeed, a full-length picture of George III., and one of his Queen, hang on the walls. In the council chamber I noticed a likeness of a former and favourite M.P. for the borough, also a picture of the former Town Hall, showing, also, the market-place. On the landing near I noticed on a panel the borough arms, bearing the date 1606. But I must hasten. Next, a walk through "The Brittox," an odd name for a street, meaning, perhaps, "larracks;" then to another church, St. Mary's, and a distant peep at the castle, now restored; then home again, driven in by the cold, and snow is again falling. The dessert is renewed to the amount of one glass of wine to warm us after the cold walk. "By the way," said I, "is there time for me to take a second look at your Pigeons? I like a second look to correct opinions if necessary." "Oh, there is time, and I shall be delighted to go up again—only too happy." So we again sought the long loft, and looked at and handled several birds; they seemed old friends, and I never saw better birds, especially the Fantails. A cup of tea followed and a poultry chat, in which I had the pleasure to agree with my host on most points, and then back to the station.

Oh! Devizes, I liked you well; I liked your most un-manufacturing-district look, I liked your old-world historic appearance, I liked the friends I met there, and some day I hope to go there again. Such, good reader, was my "day at Devizes."—WILTSHIRE RECTOR.

THE APPOINTMENT OF POULTRY JUDGES.

AFTER the expression of Mr. Beldon's opinions in your Journal of last week, I think it unnecessary to bring forth further arguments to induce him to resign. To find that he not only disagrees with, but is absolutely ignorant of, a rule setting forth one of the principal objects of the Club, will, I have no doubt, not a little astonish his brother members, especially Mr. Zurhorst, who gave his opinion on the subject in so decided a manner a few weeks back. If the rule is rescinded, as he appears to think, I am very glad, but I am afraid such is not the case.

Whilst acknowledging that he sells "a large quantity of poultry," Mr. Beldon objects to the name of dealer, but as he buys birds wholesale and sells them retail, I do not know what else to call him. I know several instances in which he has bought up the stocks of retiring exhibitors in a single lot, and sold them again in pens or single birds to suit purchasers. I have known him for several years, and have always looked upon him in that light; and it is worthy of remark that he did not object to the name until he was called upon to resign, although it had been published a full month in your Journal.

Mr. Beldon is mistaken in supposing that I considered his showing in his daughter's name an additional reason why he should relinquish the office; the reason why I introduced her name was to show that the birds really belonged to Mr. Beldon. My additional reason for thinking that he ought to resign was, because I did not think that the owner of "the most successful yard in the kingdom" should be one of the persons to appoint the Judges. Still, when he enters his birds in Miss Beldon's name he commits a breach of the rules of every Show at which he exhibits; for do not the rules require the entries to be made in the name of the proper owner of the birds?

In conclusion, I confidently hope that Committees will consider the advice given in my last letter, and appoint the Judges themselves, and then the question of Mr. Beldon's resignation or otherwise will be of very little moment, especially to—A LOOKER-ON.

ROOKS THE CAUSE OF PIGEONS DESERTING THEIR HOME.

In November last I erected an excellent Pigeon-house, replete with every comfort and every advantage as to its aspect, warmth, size, height from the ground, protection from vermin and cats duly considered. In this house I placed six pairs of Pigeons—well-bred Bald-head Tumblers and one pair of beautiful Mottled Trumpeters. After due confinement they were all set at liberty, and continued to be quite at home all through the winter. They laid, sat, and were prospering well, until one fine morning in the middle of February one disappeared for two or three days, but returned again; soon afterwards two or three birds did the same, and at last all the Pigeons during March took these freaks into their heads, until my dovecote became destitute of all but the Trumpeters. These remained until about a week ago; they, too, are now gone—gone altogether, notwithstanding inquiries, offers of reward, &c., so that I am convinced they are not within miles of their home.

I find that Pigeons have a great fear of rooks, and as I have a large rookery not far from the dovecote, there is no doubt that when the rooks began to come to their old haunts to build the Pigeons were terrified, and at last so much so as to leave their home and altogether disappear. The absence of birds of prey, as hawks, which might have caused the mischief, confirms still more strongly my firm conviction, that if there is a rookery within a quarter of a mile of a dovecote the Pigeons within it during the building-time of the rooks will mostly, if not all of them, leave their homes; whether they mean to return remains still unproved to—CHANTICLEER.

DUBLIN SPRING POULTRY SHOW.

(From a Correspondent.)

THE above Show was held in Kildare Street, Dublin, on Tuesday the 18th inst. and three following days; and though the weather was most unfavourable there was a numerous attendance of visitors. We were pleased to see so much improvement in the different breeds. *Dorkings* headed the list, and among them were some very good specimens. There was a splendid pen of Silver-Grey chickens, the property of R. W. Boyle, Esq., which we have no hesitation in saying it would be very difficult to beat at any show. In *Spanish* twenty-seven pens competed; the third-prize pen of old birds contained two hens that left the others far in the shade. In *Spanish* chickens we have seldom seen so good a pen as that which obtained the first prize. In *Brahmas* Mr. Boyle carried all before him, and we never saw better. In *Cochins* F. W. Zurhorst, Esq., had it all his own way, and they left nothing to be desired. The first prize went to Whites, the second to Silver Cinnamons; and if we may be allowed a remark, the prizes should have been reversed. The Cinnamon cock was a wonderfully good bird. *Games* were only poorly represented. In *Polish*, White-crested birds were successful. In *Hamburghs* there was no merit. There was no class for *Bantams*. Mr. Zurhorst showed a nice pen of *Orléans-Cours*.

The prize pen of young *Turkeys* was very fine. The first-prize pen of *Aylesbury Ducks* was really good, having splen-

did bills, and being very fine. In *Rouens* there were some good birds, Mr. Boyle's being remarkably good. The first-prize drake was the finest we have seen for some time. In *Geese* Toulouse carried off all the prizes. Mr. Dawson, of Hopton Mirfield, exhibited a beautiful pair of *Egyptian Geese*, which were commended. Mr. Boyle's first-prize gander weighed 30 lbs. The pens used were Turner's, of Sheffield, and they gave every satisfaction. The following is a list of the awards:—

DORKINGS (Silver Grey).—First, Second, and Third, C. P. Leslie. *Chickens*—First, R. W. Boyle, Dundrum. Second, R. P. Williams, Dublin. Third, C. P. Leslie.

DORKINGS (Coloured).—First, R. P. Williams. Second, R. W. Boyle. *SPANISH*—First, A. Comyns. Second, Miss De C. Drevar. Third, R. W. Boyle. Highly Commended, De C. Drevar. *Chickens*.—First, R. W. Boyle. Second and Third, A. Comyns. Commended, W. Perrin; R. P. Williams.

BRAHMA POOTRA.—First, Second, and Third, R. W. Boyle. *Chickens*.—First, Second and Third, R. W. Boyle.

COCHINS.—First, Second, and Third, F. W. Zurhorst. *Chickens*.—First, Second, and Third, F. W. Zurhorst.

GAMES—Prize, C. H. Peacock. *Chickens*.—First, Miss Langtry. Second, C. H. Peacock.

POLISH.—First and Second, Miss De C. Drevar. Highly Commended, R. P. Williams.

HAMBURGH (Pencilled).—First and Second, Mrs. Kemmis.

HAMBURGH (Spangled).—First, R. P. Williams. Second, C. H. Cooper.

CHERRY-COLOURS.—Prize, F. W. Zurhorst.

TURKEYS.—Prize, R. W. Boyle.

GAUSE.—First, Second, and Third, R. W. Boyle. Commended, W. Dawson, Hopton, Mirfield.

DUCKS (Aylesbury).—First, R. W. Boyle. Second, R. P. Williams. Highly Commended, A. Warburton.

DUCKS (Rouen).—First and Second, R. W. Boyle. Highly Commended R. P. Williams.

Mr. Stanton, of Dublin, officiated as Judge.

STORIFYING—INFLUENCE OF SEASONS ON THE PRODUCTION OF SWARMS.

I BEG to return my thanks to "A RENFREWSHIRE BEE-KEEPER," for his friendly comments upon my storifying proceedings last summer, and hope that his observations may prove serviceable both to myself and others. I have been long aware that bees will gladly avail themselves of accommodation afforded in the shape of a nadir; but have also feared that such accommodation would, if offered to a supered hive, divert their attention from the super. Perhaps "A RENFREWSHIRE BEE-KEEPER" will kindly detail his mode of procedure in a future Number of your Journal.

As long as I had English bees to deal with, I found a single super was almost always sufficient to prevent the issue of a swarm; but with Italian bees, both storified hives and also first swarms have almost invariably sent out swarms, though the latter have always been nadired, and sometimes supered into the bargain.

Observation has convinced me that the fecundity of the queen bee is much greater than has been generally supposed, and that the population of a hive is frequently much restricted from want of proper accommodation. Dr. Bevan says wet seasons are generally productive of swarms, and dry ones of honey; but last summer demonstrated that dry seasons may be productive of swarms, if they also prove unproductive of honey. My three first swarms last season were—May 15, a natural swarm; May 16, an artificial swarm; and May 18, an artificial swarm. These all progressed very well for about a fortnight, collecting honey from the apple trees and sycamores (which were covered with a great profusion of blossoms), so that the hives were nearly filled with comb by the end of May, and contained a good deal of sealed honey. June was excessively dry, and upon examining the swarms at the end of the month I found all the combs almost full of brood, with very little honey, nearly every available cell containing either sealed or unsealed brood. The hives were all nadired and were full-sized Woodbury-bar, or bar and frame-hives.

All these swarms sent out swarms in spite of nadirs; and one of them did so although it was both supered and nadired, after all the royal cells had been once excised. This hive after the return of its swarm worked very vigorously, and continued in pretty brisk action after all the other hives had almost ceased to work. I believe they were gathering honey from honeydew. They yielded 8 or 9 lbs. of very fine-flavoured honey from a shallow super, but it was dark-coloured although stored in virgin comb. The bulk of the honey I obtained was very much lighter in colour.—J. E. B.

HIVES AFFECTED BY DAMP.

My bees live on the north-east coast of Norfolk in flat-topped straw hives, placed on a sheltered little lawn surrounded by tall trees, though not overhung by them. The stands are 18 inches from the ground. Last summer I took but little honey. Only two hives out of six swarmed; I prevented the others swarming. In September and October I fed all with barley-sugar, and placed glasses on the top to avoid damp. When they were weighed, in the beginning of winter, the eight hives each weighed from 20 to 31 lbs., boards and hives. When I examined my hives in the beginning of February I found some hives with only a few bees, some empty, only one at all strong. Only two have been saved, and all the hives but the strong one were damp and mouldy; some were well supplied with honey and pollen. How am I to account for damp destroying so many, and yet one hive not being in the least damp, though placed with the others, and treated exactly like them? Is the sea coast a bad place for bees? Should I cover my hives with any cement? How can I further guard against damp? These bees came from a village eight miles from London, where I had excellent success, and I hardly ever lost a hive in winter; but since the change to Norfolk the bees have degenerated.—M. H. M.

[The mischief you describe appears to have arisen from internal moisture, probably aggravated, if not entirely produced by, the means intended to obviate it. If the flat tops of your hives are made of wood it will go far to explain the mystery; if not we should be disposed to refer it to condensed moisture running from the glass into the interior of the hives. When glasses are applied in this manner during the winter they should stand either in feeding pans or in circular metallic troughs, specially adapted to the purpose; but, in the case of hives made entirely of straw, we believe them to be quite unnecessary. That one hive should escape uninjured under exactly similar circumstances is not at all unusual, just as one member of a family frequently remains healthy when all, or nearly all, the rest are stricken down by disease. The sea coast may not be so favourable a locality for bees as your former residence, but we see no reason why they should not prosper, although not, perhaps, to so great an extent.]

RANCIDITY OF BUTTER.

I HAVE no doubt that the bad flavour of "COCHIN'S" butter was caused by decayed vegetable matter of some kind. Some years ago the butter produced on a neighbouring farm was found to be of bad quality in consequence, it was said, of the cows being out of condition. It being autumn and severe weather setting in, the cows were housed for about ten days, and the next churning was of the usual good quality. A few days of fine weather coming on the cows were again turned out to grass. The butter was again of an unpleasant flavour; the cause of the bad flavour was then thought to be the cows eating grass that was in a state of decomposition, as it often is after frost or severe weather. It could not be from the cows eating tree leaves of any kind, as the fences round the field were all stone walls, and there was not a tree within two hundred yards of the field except one small tree with a stem about 2 inches in diameter. Butter and milk will be found to have a bad flavour if the cows are allowed to eat decayed vegetable matter of any kind. I have seen a cowkeeper who was noted for good milk, cut up his turnips by hand, and in doing so cut off every piece that was decayed. Decayed garden refuse of any kind eaten by cows will cause the butter to be bad, especially if there be any onions in it. A farm labourer in cleaning up his master's garden wheeled into the farmyard a barrow-load of onions, the milch cows ate them all up, the result was butter not fit to eat. Cows will often give bad butter if fed on hay and grass. An old farmer now deceased would never allow his cows to eat grass and hay both on one day. All kinds of horned cattle will often suffer from indigestion, and be swollen almost to bursting, if allowed to eat decayed vegetable matter. A simple remedy in such cases is a handful of common salt dissolved in warm water, and given to the cow or other animal. Turnips and hay will produce bad butter. I have not, like your correspondent "T. G.," inquired in the Washbourn, but I know that in the lower

parts of Wharfedale, when cows are fed on turnips, straw is given to lessen the taste of the turnips. The taste is always bad when the cows feed on hay and turnips. A farmer who often milks upwards of twenty cows, assures me that his butter is always bad when the cows are fed with locust beans, so bad that he has given up churning.

I hold an opinion that ergoted grasses will give a bad flavour to milk or butter. The last year produced ergot (*Spermodia clavus*, Fries) in abundance, and of large size; on roots of *Lolium perenne* (perennial rye grass) I picked spurs nearly an inch long. In districts where ergot abounds there will always be a great number of barren cattle. I am informed on good authority, that a cattle breeder for exhibition last year lost £300 from abortions caused by his cows eating ergoted grasses. Will some one of your scientific readers of THE JOURNAL OF HORTICULTURE, have the kindness to tell us the best way to get rid of this pest to agriculture? Drainage is not always a sure remedy, as I find it growing in well drained land.—ROBT. SMITH, Dewsbury.

OUR LETTER BOX.

EGGS FAILING TO HATCH (*S. H.*).—We should be more disposed to attribute the failure of the eggs to the unkind weather we have had than to any other cause. Thousands of eggs have failed from being frost-bitten. Try a sitting of those laid since the change of weather. Test them at the end of a week, and if they have no life in them procure another cock.

FOWL'S NECK SWELLING (*W. B. D. A.*).—Such swellings as you mention are more common among Spanish than any other breed. They should be taken out when they first appear. When they harden they become full of cheesy matter, and pervade the whole system. It is a bad case.

CHICKENS DYING IN HATCHING (*D. O.*).—We have no doubt your chickens die in the shell from the eggs being too dry. For a week before hatching they should be wetted every morning, or at any time when the hen is off the nest. Failing this assistance the inner membrane of the egg becomes as hard, tough, and brown as Indian rubber. Few chickens can get through it. When the hen is off dip your hand in water and wring it over the egg freely.

DORRICK'S FACE SWOLLEN (*Old Ealing*).—It may be only a cold, but the swelling you mention is like the beginning of roup. Wash the swollen part with cold water and vinegar. Give castor oil, a table-spoonful at a time, and feed on bread and ale. It is disputed whether it is contagious or not. It is so, undoubtedly, to sickly birds, but healthy ones seem to meet it with impunity. If it is the only bird affected and not very valuable, put her away.

PRESERVING EGGS (*W. T.*).—We keep eggs for months in very good condition, even for the breakfast table, by putting them in wetted lime in a common bread-pan, alternate layers of lime and eggs. They will keep for a long time if they are covered with butter as soon as they are laid.

REDESSING A GAME COCK (*Old Subscriber*).—You run no risk whatever in redecking the cock. Use a pair of very sharp clipping scissors, and cut from front to back, as close as possible, without laying the skull bare.

FOWLS DISORDERED (*Reigate*).—There is no reason why your fowls should be sick so far as we can judge, unless they are overfed. "Scrape from the kitchen" is a wide term, and may easily mean more food than is good for them. Keep them for a few days on meal mixed with milk, and feed sparingly.

SOIL OF FOWL-YARD (*P. W. R.*).—You will find the smell disappear. Sprinkle charcoal powder over the surface, keep it well raked, and you may bury some pieces of lime an inch or two below it.

EGG-PASSAGE PROTRUDING (*E. B. P.*).—It is more than probable the pullets have not laid till now. The first egg, and sometimes up to the third and fourth eggs are laid with difficulty, often causing bleeding and protrusion of the egg-passage. The other hens are attracted by it, and pick and pull it; hence death. If there be any difficulty after the first, the cause is internal fever, and the cure, moderate feeding and plenty of green food, lettuce if possible. All difficulty in laying is prevented if the fowl can be watched, and the egg passage thoroughly lubricated with a feather dipped in oil. It is no disease.

GOLDEN-FENCIBLE HAMBURGERS (*Hamburg*).—The ordinary food for other chickens is that which Hamburgs require, boiled eggs, bread and milk, bruised wheat, able scraps, fat and skin chopped fine; curd. Chickens require beer when they are hatched very early in the year, or when the cold is severe; also during strong easterly winds. They prefer beer at all times, but they do not always want it. When a comb turns black, it is from stoppage in the crop or elsewhere, or from eating poisonous or poisoned food. Give a table-spoonful of castor oil every other day for a week. The birds cannot be in health with a black comb.

BANTAM LAYING SOFT EGGS (*A. A. E. S.*).—The secretions are at fault, and the desire to eat the eggs shows a disordered state. Give a table-spoonful of castor oil twice, at twenty-four hour's interval. Put some false eggs—very hard ones—in her nest. If you find she strains in laying dip a wine-feather in oil, and lubricate the egg passage with it. This will remedy all.

TOULOUSE GESE (*L. C. A. Subscriber*).—Toulouse Geese are marvellous layers, but we consider them non-sitters. Yours has laid fifty-three eggs, but one of ours has laid above sixty eggs, and seems inclined to keep on.

ARRIVAL OF THE NIGHTINGALE AND CUCKOO (*Bishopstoke*).—The Nightingale precedes the Cuckoo. In the south of England the former arrives in the first half of March, but the Cuckoo not until after the middle of April. The dates of arrival vary a few days in each year.

TEACHING BULLFINCHES TO PIPE (*John Farr*).—Look out for some nests next month, when the young ones are ten days or a fortnight old, take them and bring them up by hand, put them into a covered basket, and after each meal play or whistle the tune over to them which you wish them to learn. Continue the same for five or six months.—A. F. E.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MAY 2-8, 1885.	Average Temperature near London.			Rain in last 38 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
2	Tu	Oak and Vine foliate.	65.5	39.1	50.3	13	32 4	22 47	58 10	53 0	1	3 10	123
3	W	Horse Chestnut flowers.	61.8	40.2	51.0	17	30 4	24 7	after.	21 1	8	3 17	123
4	Th	Medlar flowers.	62.4	38.4	50.4	13	28 4	25 7	5 1	46 1	9	3 23	124
5	F	Pheasant lays.	62.5	39.0	50.2	20	26 4	27 7	7 2	10 3	10	3 28	125
6	S	Mountain Ash flowers.	61.3	38.9	50.1	14	24 4	28 7	10 3	32 2	11	3 33	126
7	SUN	3 SUNDAY AFTER EASTER.	59.1	40.0	49.5	16	23 4	30 7	13 4	54 2	12	3 38	127
8	M	Laburnum flowers.	58.9	39.0	48.9	16	21 4	32 7	17 5	15 3	13	3 42	128

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 61.2°, and its night temperature 39.2°. The greatest heat was 84° on the 6th, 1863; and the lowest cold, 20°, on the 2nd, 1855. The greatest fall of rain was 1.36 inch.

ROCKWORK.



ROCKWORK as it occurs in Nature is of two kinds; the one with, and the other without water. Each is furnished with appropriate plants, but the best examples are where the rocky views are accompanied with water.

Though water is very acceptable, and in many ways desirable in forming rockwork, yet it is often

introduced without any absolute necessity, for the absence of water does not constitute a deficiency in rockwork, some of the most picturesque forms of this occurring on mountains, where it is mostly clothed with plants. On the other hand, rockwork accompanied by water is the more beautiful; but good rockwork may be formed without water, yet water is materially improved by a judicious accompaniment of rockwork. It is, however, absurd to form rockwork on the margin of water and occupy the cultivable portion with plants that grow on lofty, dry hills, as is too often the case. Pope says, "The principles of landscape gardening consist of—first, the study and display of natural beauties; second, the concealment of defects; third, never to lose sight of common sense." Marshall cuts it short and embodies it all in three words, "nature, taste, and utility." Loudon admits or advocates two principles, one of "design or relative beauty," and "imitation or natural beauty," both very distinct, and the one perfectly inconsistent with the other. This is precisely the case with rockwork in gardens. There is no principle in general, but a mixture of tastes that do not comprise the rules contained in "the unity of the whole and the connection of the parts." I have no liking for little rills, diminutive rocks, and tiny lakes, for above everything this rule should be observed, "never to attempt more than can be carried out upon a scale sufficiently large to have a natural effect." Placing a variety of features in a small space so as to prevent any semblance of utility, there being no natural beauty and no concealment of defects, may add to the intricacy, but as a work of art it is contemptible. It is not meant that no rock should be smaller than that of Gibraltar, no lake less than Windermere, nor any stream smaller than the Danube; but rockwork is not to be formed by upsetting a cartload of stones here, there, or anywhere, nor a pond made that would hardly afford swimming-room for a pair of water-fowl, or a rivulet for the purpose of putting over it a rustic bridge. The greatest oversight of the present age is the crowding of many features where there is only space to exhibit a few to advantage. Every feature should be such that a man of taste would have to "look up" at it, for if he does not do this he will "look down" upon it.

No. 214.—Vol. VIII, New Series.

Rockwork to appear in all its grandeur should be bold, rough, and extensive. It should form a feature in the distance, have a bold outline, have broad and flat ledges, fissures deep and shallow for the growth of plants—in fact, have the appearance of a rock, at one time solid, but broken into fragments by storms or time. Diminutive rockwork does not show what it is meant for, and nothing is more paltry than a mound of earth covered with a few stones for the sake of growing a small number of plants, though it may answer that purpose as well as if the rock were 100 feet high. It is better to see a large rock split into few parts and not far asunder than to make up a rockery of small stones or a hundred fragments. Large plants on large stones or pieces of rock are natural; the plants on or amongst small stones are not only at variance with the character of the rock itself, but look too artificial. Small plants on a small rockery do not mend the matter, for however small, they look far too large for the places assigned them, whilst they fail to hide the deception. The greatest fault of most artificial rockwork is, that it is made on too small a scale, affording no feature at a distance, and when you come upon it it can be looked down upon and over instead of the observer having to look up to it, unless, indeed, it be a series of nooks, arches, and counterparts of ruins that give an appearance of an old building, where the Ivy may love to cling, but the Alpines be out of place, and too large for their stations. In some other cases rockeries can only be compared to a cartload of stones emptied in a heap. True it is, that a rock of two stones, or even bricks, or clinkers, will grow a plant as well as if it were as high as a mountain; but in landscape gardening a rock should never be so low as to permit of a view over it. Rockwork, however, is not necessarily a part of landscape gardening, and unless a necessity appear for its introduction, and unless it be judiciously placed and managed, and of a respectable size and elevation, it would be far better left out.

The reasons for desiring rockwork are—first, a wish to grow rock plants; second, materials for the formation of rockwork which would be in the way were they not so appropriated; third, a large broken mound or hillside that is every way a defect, which being converted into rocks would form a pleasing feature; fourth, the presence of a deep ravine which it is desirable to retain; fifth, excavations, as old gravel-pits, quarries, &c., not easily filled up; and, lastly, a wish for alpine scenery. With these the temptation to construct rockwork is great, and it is still greater if there is water near. The evils are—first, sameness and diminutiveness, which destroy the effect of the picture and the rock-like appearance; second, regularity of outline or smoothness, which is destructive of grandeur; third, selecting an unsuitable situation; fourth, constructing rockwork without attending to the surrounding scenery.

Perhaps the best field for the study of natural rockwork in Derbyshire and Devonshire, where there are some magnificent examples. We may find rocks of all sizes in

No. 366.—Vol. XXXIII, Old Series.

these and many other parts of the kingdom. Wales, for instance, abounds in them, and so do Scotland and the Isle of Wight, but we nowhere find an assemblage of small stones piled one upon the other, like by far the largest proportion of the rockwork of modern gardens.

As regards the desire of growing rock plants, there is no objection to them, provided the rockwork is not made so as to be destructive to some other feature. To form a rock on a level piece of ground is simply ridiculous—it can never appear natural; but it may be made to appear so by excavating a hollow to be filled with water, and throwing the soil taken out into a mound of irregular form, building a part with rock quite steep, another flat, with large pieces of rock cast here and there as if by accident rather than design, some on their ends, others on their sides, some forming a natural arch, some leaning and about to fall, and all uniting to form a rough bold scene. In forming the rockwork care must be taken that the earth is solid beneath and the crevices, also, filled with soil where it is desirable to introduce plants; but cover the stones as little as possible, otherwise the rocky character will be destroyed, and the rockwork will present the appearance of a mound covered with stones. It should be elevated, and so much so as not to be looked down upon. If water is introduced it may come trickling down from a fissure in the rock, drip over stones, and fall over some placed perpendicularly into the pool or lake beneath, and here it is desirable to have the rockwork in the shade so that it may be accompanied by Ferns and plants that delight in shade and moisture. The pool itself may be surrounded with grass or lawn, or have a rocky edge where the smaller aquatics may be grown. Instead of dripping from the rock into the pool beneath, the water may be conveyed through a rocky passage or channel strewn with stones, and planted with plants that thrive in shallow water, or grow in moist ground. It may lose itself in a fissure of the rock, appearing again at another point. It may again find its way into a hollow and there form a lake, and there may be a rocky path near the lake with a rock rising abruptly from it, or the water may wash the base of the rock, the latter rising from three sides and forming a sort of amphitheatre, the summit of the rock being bold and rugged, and the plants in the fissures and on the ledges in large clumps; shrubs, and even trees being introduced in order to give the effect at a distance which small plants have close at hand.

Rockwork may also be formed by sinking a path, throwing the soil into irregular mounds, and forming arches in some perpendicular part where the walk rapidly descends or ascends, so as to appear as if the stones forming the arch had fallen from the heights, and being thrown upon each other formed the arch accidentally. This kind of rockwork may be made very pleasing, only do not use too many and too small stones in its construction. Perhaps the best example of this kind is in the Regent's Park gardens, where the passes with their rocky sides and the rocky arches have but one fault, and that is they are too small, though happily contrived in other respects.

As to the other points, the second is simply a repetition of the first, except inasmuch as it is a conversion of materials rather than providing a receptacle for plants. The third is easily remedied, providing irregularity of outline, boldness of feature, and avoiding all appearance of sameness are kept in view. The sides may be rocks and the summit a grassy slope, or clothed with nobler verdure, and the rock may appear again above that, which is perfectly natural, for in mountainous places rocks protrude half-way, and appear in patches here and there up the whole face of the mountain. Fourth, a deep ravine or valley may be much improved by converting the rougher parts into rockwork, and clothing the less steep; in some places having rock on both sides as if the ravine had been created by a severance of the earth, and taking advantage of a projection to introduce a rocky crag, which may be backed up with shrubs not with a view to hide anything beyond, for that is bad, but to give the idea that the earth had been rent and the part on the one side severed from that on the other, which should be clothed in like manner, leaving the rock prominently in view. The ruin of a building appearing as if demolished in the general convulsion, may be introduced with great effect. The paths should not be marked, though they may be introduced to a certain extent to afford access

to the different parts, but they should be of the rudest kind and appear as neglected as possible. If dressed walks are made, one taking a circuit of the whole and permitting of the principal features being seen only once, or if twice from a different point of view, will be sufficient, and this walk should be concealed as much as possible. If it were possible to bound the view by high rocks, crowning them with hanging woods would have a fine effect, unless a stream passed through the ravine, when the high rocks with overhanging woods should not bound the view, but be situated on one side of the stream washing the base of the rocks, so as to afford a clear view of the open country, the stream widening as it passed through green meads and groves. This will be the open end of the ravine, or the view from it. If there is no stream the view may likewise be open, though bounded by some object in the distance, or the view will be barren-looking. The view in or up the ravine should be different. It may consist of a high rock having a cascade in the centre, with a richly-wooded background, or the ravine may lose itself at the foot of a mountain, partly wooded, with here and there a piece of rock projecting. If a stream pass through the ravine or rocky glen it will be considerably improved by placing rough stones in parts, and introducing rocks to divert the course of the stream should it run straight.

For forming caves and subterranean passages great facilities are afforded by quarries and gravel-pits. The sides should be broken down to what we may term a sloping crag in one part, leaving a perpendicular wall in another, just as it may contribute to the general effect. The crags should be bold, with here and there broad shelves and deep fissures. Some parts should appear as mounds of earth clothed, however, with shrubs and dense foliage, and grassy slopes may be introduced to relieve the crags and connect the rocks with the wooded parts. The shady and moist places are peculiarly well adapted for Ferns. Form the whole so that there may be no blemishes to be hidden by planting. Avoid ruins—at least, do not form them of unhewn stones, and do not throw arches to caverns with hewn stones, or even place rough stones one upon the other systematically, but tumble them together; let the crags, interstices, and ledges appear real; above all, let the character be that of a rock—distinct and varied, bold and rugged, no even surface, but uneven; the whole forming a pleasing and noble object.

Lastly, Alpine scenery. This is too much to attempt unless the ground favour such a disposition. In level ground it cannot be produced without great labour and expense, and it is better to let it alone. The examples which we find in many nurseries and public gardens are not worth copying, nor is anything to be learned from them except the evils to be avoided. Imagine a stream running through rocks rising from the water to a height of only a few feet, with Heaths, so rarely found as rock plants, on the margin of the water; and find me a lake not cut in two by a rustic bridge, serving only to spoil an otherwise fine sheet of water. Heaps of stones piled one on the other on level ground in front of mansions, on lawns, in pleasure grounds, or parks, are not necessarily rockwork. If a rock is wanted, copy nature. There rocks are of all sizes and forms, but not in the middle of grass fields. Further, note a fountain in the centre of a garden, truly a work of art, surrounded by rockwork, and form your own opinion as to whether they are not two very distinct and incongruous objects, the one belonging to the polished or gardenesque, and the other to the picturesque or natural. Wherever a rockery is attempted, it should be screened from the rest of the ground by well-disposed shrubberies, so as to give that rockwork a distinct character, forming a pleasing contrast to the more regular portion of the grounds. Though barren rocks appear in nature, or plain rocks with but one or two kinds of plants to adorn them, yet we are not bound to imitate these, but rather to bring together many beauties of natural rockwork in one place, and hardy plants from all parts of the world, in order to secure diversity and the best general effect, that some parts may be admired for their richness in plants, others on account of the rocks.—G. ABBEY.

VEGETABLE FLANNEL.—Those of your readers who take an interest in the manufacture of vegetable flannel from the *Pinus sylvestris*, may like to have the information that since about

1860 there are two establishments near Breslau, in one of which Pine leaves are converted into wool, while in the other, for invalids, the waters used in the manufacture of Pine wool are employed as curative agents. The process for converting the Pine needles into wool was discovered by Mr. Pannewitz. In the hospitals, penitentiaries, and barracks of Vienna and Breslau, blankets made from that material are now exclusively used. One of their chief advantages is that no kind of vermin will lodge in them. The material is also used as stuffing, closely resembles horse-hair, and is only one-third its cost. When spun and woven, the thread resembles that of hemp, and is made into jackets, spencers, drawers, and stockings, flannel and twill for shirts, coverlets, body and chest warmers, and knitting-yarn. They keep the body warm without heating, and are very durable. The factories are lighted with gas made from the refuse of the above manufactures.—C. W. H.—(*Athenæum*.)

ON THE UTILISATION OF NIGHT SOIL APART FROM SEWAGE.

(Continued from page 307.)

BUT I am losing sight of the pamphlet. Mr. Wilmot, at page 6, refers to two others written by the Rev. Henry Moule, entitled "Health and Wealth," and "Manure for the Million." I have never seen them, but they first drew Mr. Wilmot's attention to the subject, but, unfortunately, machinery was suggested, which, let me add, for the million, would be likely to prove a failure, yet as to the objection as to the difficulty of procuring dry earth, I think that would be easily overcome. The habit of the cat and some other animals is happily adverted to to prove that we cannot err in copying nature, and that where there is a will the poor dumb creatures point out to us a way. Then follow some remarks by Mr. Wilmot against sewage, which I hope he atones for at page 9, where he says, "I am now only speaking of the million, and do not propose to interfere with the higher classes in private houses, comparatively small in number, who may still wish to employ water as an agent until they can be satisfied it may be dispensed with," and he owns the difficulties of anticipation in these matters to exceed those of reality. Returning to the dry ashes again an appeal is made to medical men, and then the example of the Chinese is quoted, and some most sensible remarks are made upon the barracks of European soldiers in India. I cannot pass over a paragraph at page 12, for the advice is most valuable:—

"The system I advocate, as applied to country villages, is most simple in operation, as may be seen in some houses in the village near to which I reside in Derbyshire; but supposing other villages to be unwilling or unable at once to adopt it, much may be readily done in the abatement of nuisances. We will suppose a privy or cesspool to have become offensive, this is caused by water from some channel or another having got into it in undue proportions. First stop this channel, and then apply a few barrowfuls, or a cartload or two, of ashes or dry earth, and the whole can be removed and utilised at once without danger; and if, in future, the owners of the vault and privy would prevent water getting into it, and throw daily into it, or even weekly, the dust and ashes obtained from their houses, they would soon have a store of valuable manure for the garden. The system might also be employed most advantageously in small farms, and more so even in large ones.

"We will suppose the small farmer to have no spare shed under which he could place his manure heap, but he might possibly have a spare stall, cow or horse, or he might erect a thatched shed. In this let him place daily the contributions of his cows, horses, and pigs, together or separately, under cover, and daily place over them the dust obtained from his house, or his cinders or dry road scrapings, or whatever of dry road soil his farm affords, and in a few months he would have a collection of valuable manure exceeding in quantity anything he had before anticipated, and his straw would be all saved for chopping up; of course the large farmer might make more extensive and beneficial arrangements on the same principle. I was lately discussing this subject with a clergyman, who told me that he had for years placed the riddled dust of his ashes in a

corner of his yard, without cover, day by day, and had poured on it daily all the slops of his house, and soapuds, dish-washings, &c., and his gardener and farming man had been most willing to use the heap up in his garden and farm, especially when mixed with other composts, but he told me he had remarked that in rainy weather the heap became offensive. This only showed the simple necessity of a shed or cover for his heap."

In following paragraphs the futility of using vegetable substances—such as sawdust, which will not deodorise, and cinders, which will, but did not, from careless superintendence—are pointed out, also where earth-closets would prove peculiarly suitable; and in a few closing lines Mr. Wilmot allows a strong bias against sewage once more to appear, and in this respect I beg to differ with him. When town sewage is allowed to run into our rivers, then I grant him it is in opposition to the laws of economy and nature. Nevertheless, in a sanitary point of view, the prohibition of cesspools and the free use of water in towns are conducive to health, and so soon as we can convince people that sewage is a valuable manure, and that 80,000 gallons of liquid can be pumped by steam power 100 feet high at a cost of 1s., the whole difficulty will vanish, and by-and-by local authorities will only be too likely to become embarrassed with applications for the sewage. It is not merely as it relates to water-closets, but there is the chamber-ley, soapuds, and so many other manurial ingredients held in suspension in the house sewage of the upper and middle-class residences in the country, and of factories, barracks, workhouses, and prisons, that it ever must be a great saving to conduct it to the land by its own gravity in a liquid state, and it seems to me that there is no choice in the matter as regards towns from the increasing use of water-closets. In towns, too, the inhabitants could never be supposed to become interested in the earthing-over process in a cultural point of view; besides, conveyed at once upon the land no deodorisation would be required. The ground is the only perfect deodoriser, naturally operating very rapidly in purifying the sewage, for the manurial matters held in suspension are at once abstracted as it filtrates through the soil. I find that almost as soon as it is applied to this garden all smell disappears; and is not this in point of fact performing artificially and at once what in the dry-manure system has to be done naturally by the rain? We have had both systems at work here for years to our great advantage, but there is this distinction in practice—the earthy matter is cast out of the closet once a-year, and mixed with the compost-heap just before it is wheeled on to the garden to be worked into the ground in the trenching process, after the manner pointed out at page 169; but the sewage from the tanks is used frequently, and it is never now allowed to remain in bulk long enough to arrive at the putrefactive stage.

Mr. Wilmot adds a postscript to his pamphlet in consequence of an issue of a third edition of Mr. Moule's "National Health and Wealth," from which he learns that that gentleman's principle has been adopted in some of the gaols and barracks in India," and also that "the Chinese although they save and utilise everything, do not in the first instance apply dried earth as a deodoriser. This discovery is due to Mr. Moule." Seven years ago, in Vol. XIX., page 368, in an article stating the effects of syringing the foliage of fruit trees, in a state of blight, with hot diluted ammoniacal liquor, I wrote the following:—"Analogous to the application of ammonia to the leaves of trees, there is a practice in China. It is pointed out as follows by the *Times*' special correspondent, writing from Hong Kong, on the subject of Chinese agriculture:—'Grass grows rank only upon graves. One or two buffaloes, two or three goats, a breeding sow, ugly long-legged fowls (called Cochins in England), and a flock of ducks and geese, are the live stock of a Chinese farm, which maintains a hundred labourers. Stable-yard manure is scant. Human ordure is collected with care in numerous open earthenware pans, where passers-by can contribute their offerings, both offending the senses and poisoning the air. In the suburbs, each house has its cesspool; in the country, each cottage its inviting latrine. At Ningpo two immense pans lie opposite to the entrance door of the first native merchant of the city, awaiting the payment of 2000 dollars, which is the price of their removal. To an Englishman, who visits

their country, these manure traps constitute his first and last impressions of never-ceasing horror. Boats convey this produce through the inner waters, and anchor close to you at night, only to remove for a consideration. One Englishman, in disgust, paid thirty dollars to a fellow to move on. This manurial treasure is, according to a Chinaman's way of thinking, too precious to be worked into the ground. *It is sprinkled over the leaves of the plant* (italics my own). Burnt haulm and straw of the Cotton-plant only are delved into the soil. The Chinese transplant every root of rice by hand, and each root gets its little blessing of the above liquid; but give an English farmer or gardener 'some 1000 acres of vegetable loam of an unexplored depth, waterways, reticulation of ditto for flooding purposes, labour at 4d. per day, abundance of sunshine, periodical rains, large markets, cheap communication by tidal creeks, and what corn and pot herbs he would produce, to say nothing of tea, sugar, cotton, silkworms, silk, and Mulberry leaves, our friend Giles would have to scratch his head a little before he could start on a race to overtake these Chinamen, who are 4000 years of practice a-head of him.' Still, I continue to imagine "our friend Giles" manages a good many things better, albeit, those "immense pans" do bring in the Chinamen "a great deal of money." It would almost appear by the price of it, that our northcountryman must have resided as a cultivator of the soil in the neighbourhood of Ningpo, when he gave the following warning, "Never, Sandie, never, above all things, never get into debt; but if ever you do, let it be for manure." I know our own country is scarcely half cultivated as it ought to be, because we allow the best of what is due to the land, to go to waste, and my advice to people likewise is, that if they ever do allow themselves to get into debt, let it be for erecting waterproof earth closets, and liquid manure tanks; for the very good and continuous interest that these will presently return, will enable the debtor to pay off his creditor, and leave something to spare.

I am glad to find that so able an adviser as Mr. Wilmot has taken up the subject. His pamphlet is most worthy of extensive notice and circulation amongst residents in the country, cottagers particularly, for it is the poorer sort that we want to reach in simple words. In 1852, in a cheap monthly periodical of that day, called "The Cottage Lamp," I explained in a series of papers the necessity of attending to these matters; and, as the subject is exciting deserved interest just now, I shall feel happy if, by what I have said, it may prove a means in a still greater degree of directing public attention to the matter, for the feature seems so new, and yet the plan with myself is so old. Both in the wet and in the dry state I have for thirty years been utilising the excreta experimentally, and I have not arrived at my present conclusions without some failures, and a great deal of planning, filtering, observation, and obloquy. What we should have done in the last dry season without our water and sewage tanks I do not know. The wells of Woodstock can be counted on one's fingers' ends, and what the diminished supply of water of our filthy little river held in suspension it is difficult to say, but I am glad to state that we were not under the necessity of drinking it, for these premises are now self-sustaining. The water tanks catch sufficient water from the roofs of the houses and outbuildings to supply our wants, and it is filtered for drinking and cooking purposes. The overflow from the water tank is conducted away by the old sewage drain. In the shape of sewage, all the water used for household purposes is applied to the garden, and with what comes from the earth-closet, and other matters, it is sufficient to keep the ground in a state of high cultivation. Nothing offensive runs from here on to our neighbours' premises, nor into the river; for that I take credit to myself, and am satisfied, and the rector feels the satisfaction in having improved the house and grounds, both for himself and for his successor.

In conclusion, I throw out the following suggestion for as much as it is worth:—As Government advance money for land draining at so much per cent., would it not also be worth their while to consider whether the national purse could not be made to contribute towards the abatement of a great and increasing national evil, by the advance of money at interest to those who, not having the means to make them, yet would be glad to possess sewage-tanks and

earth-closets? In one case as well as the other, for the permanent welfare of the land, I think it is reasonable to encourage men to put their shoulders to the wheel when they can see that it is for their interest to do so.—UPWARDS AND ONWARDS.

THE NEW ROSES.

THE genial spring weather which has followed the long and tedious winter has brought on a healthy and free growth in all kinds of plants that have been dormant for a long time in consequence of the continued cold. This is especially the case with Roses. For many seasons past so promising a start has not been made as at the present time, thus raising the hopes and expectations of careful cultivators in a more than usual degree. Longing as we all are to see again the lovely forms of our favourites, but not without apprehension on account of the various accidents of weather, disease, and the attacks of insects, the desire is still stronger to obtain early information on the new additions we are, or ought, to make to our rosery, and to know what purchases should be made with as little delay as possible, that propagation may be proceeded with in the ensuing season.

For the purpose of satisfying myself as far as possible on this subject, and to afford assistance to amateur friends, I took advantage of the Easter vacation to pay a visit to Mr. William Paul's nursery, at Waltham Cross. The whole stock is now in fine healthy-growing condition, and rapidly pushing into bloom.

Taking them in the order of inspection:—

First, Madame Emile Boyau is a very pretty light variety, which may be described as rosy flesh, changing to blush; of good size and delightfully fragrant. It has the habit and constitution of Baronne Prevost.

Glory of Waltham is a magnificent flower, surpassing in every respect its parent.

Leveson Gower. Its large, full, crimson flowers and vigorous habit will render it a general favourite. One of the best of the season.

Princess Lichtenstein, as a white Hybrid Perpetual, seems likely to be a great acquisition. Judging from the habit and foliage, it is superior to Louise Darzins. There not being an expanded bloom at the time of my visit I am unable to offer an opinion of its merits.

Elizabeth Vigneron is rosy pink, very large, and full, resembling Lælia, but surpassing it in form and freshness of colour. The blooms shown to me were truly beautiful.

Prince de Joinville, a large, showy, light crimson rose, will prove a useful decorative garden Rose.

Celine Gonod, pink, with a beautifully incurved petal; outer petals paler than the inner. Fine and perfectly globular.

Auguste Rivière has beautiful bright reddish carmine flowers. Perfectly distinct; but as the majority of the plants seemed to indicate a defective constitution, further experience will be necessary to decide fairly on its merits or otherwise.

Triomphe des Français may be considered a good Rose, both from its brilliant crimson flowers and vigorous habit. Probably one of the best of the season.

Michel Bonnet has bright rose flowers, large and full; but I did not observe any superiority in this variety over older kinds of similar colour and form.

Madame Charles Verdier, on the other hand, is one of the best. Its flowers are fine vermilion rose, very large and full.

Souvenir de Bernardin de St. Pierre (what a name for our gardeners!) answers the description given of it—namely, flowers varying from crimson to violet, centre red. I doubt whether it will suit the prevailing English taste.

Achille Gonod is a seedling from Jules Margottin. It must be good if it beat its parent, which I am not at present prepared to affirm that it does. It is, however, a truly beautiful Rose, with very fine foliage, and will be deserving a trial.

Rushton Radclyffe bids fair to be one of the gems of the season. Its bright red colour added to its bold, globular, perfect form, with imbricated petals, give it a prominence in company with other kinds that attracts immediate attention to it. Whether in the show-box or on the living

plant, which is the best place to view it properly, it will long retain a place both on account of its own merits and for the respected name with which it is associated.

Charles Margottin will be another valuable addition. Although of the race of the well-known Jules Margottin, it has more substance in petal and greater elegance of outline, while it possesses all the brilliancy of the fine carmine with fiery red centre. This Rose will be one of the best.

Duke of Wellington will be sure to please; notwithstanding it is one of the many scarlet Roses that of late have been introduced, it has the distinctive character of tint in being slightly shaded with maroon. Somewhat approaching Louis XIV., but not so dark, and different in shape.

Prince Eugène Beauharnais is another of the scarlets, of which it will be necessary to see more before venturing an opinion.

Maréchal Niel has not been exaggerated as regards habit, &c., but none of its blooms were sufficiently open to afford a correct idea of its beauty. It has, however, been exhibited by Mr. W. Paul, and favourably noticed.

Souvenir de William Wood and Xavier Olibo were not open. Favourably as they have been spoken of, they are both surpassed in habit and foliage by Dr. Lindley, which is not yet ready to be sent out, but will undoubtedly prove worthy of the name of the venerable botanist.

Here I must stop for the present. Our amateur friends may thus see that they will be safe with Rushton Radclyffe, Charles Margottin, Glory of Waltham, and Madame Emile Boyau. Doubtless a few months' experience will bring out other points of excellence not yet noticed, and several among those not named in this account may be found to be good.—ADOLPHUS H. KENT.

ROYAL BOTANIC SOCIETY'S SHOW,

APRIL 29.

THE last Spring Show for the season was held on Saturday last, and notwithstanding a chilly east wind the attendance of visitors was very good. The day, however, was fine with bright sunshine, but in temperature offering a marked contrast to the July weather experienced in the earlier part of the week.

As a whole the Show was in no way inferior to its predecessors, while the objects exhibited presented greater variety. Roses again formed a principal part of the display, and it is hardly possible to conceive anything finer than the pot plants shown by Mr. Turner and Mr. W. Paul. It was evident at a glance that the contest for the first place lay between these two exhibitors, but to decide which would carry off the palm was not so easy, the specimens in both collections were so fine. Mr. Turner took the first prize with Gloire de Dijon, Baronne Prevost, Souvenir de la Malmaison, the blooms of the last very large, Souvenir d'un Ami, Charles Lawson, and Général Jacqueminot. Mr. W. Paul had the second prize for Madame Boll, Souvenir de la Malmaison, Lælia, Souvenir d'un Ami, with somewhere about fifty blooms more or less expanded, Sénateur Vaisse, and Céline Forestier. Messrs. Paul & Son were third. Mr. Wheeler, gardener to Sir F. Goldsmidt, Bart., Regent's Park, was the only exhibitor in the Amateurs' Class. A numerous collection in excellent bloom came from Messrs. Lane. Roses sent out since 1863 were shown in threes. Mr. Turner was first with Lord Clyde, Alba rosea, white with a rosy tinge in the centre, and Mrs. Wm. Paul, glowing in colour. Next came Mr. W. Paul with Jean Goujon, very large and full, rose, Vainqueur de Goliath, very bright red, and Bourbon Madame de Stella, bright rose. The last-named, Alba rosea, and Madame Alfred de Rougemont, which was not so good as we have generally seen it, were exhibited by Messrs. Paul & Son, who were third. From the same firm came several boxes of cut blooms, containing excellent examples of Rev. H. Dombrain, fine colour, Princess Adelaide, a fine pale yellow Tea, Charles Lefebvre, and many others.

Palargoniums for so early in the season were excellent. Mr. Turner, Mr. Wiggins, gardener to W. Beck, Esq., Isleworth, and Mr. Weir, gardener to Mrs. Hodson, The Elms, Hampstead, took equal prizes in the Nurserymen's and Amateurs' Classes. Mr. Turner had Desdemona, Beck's

Amazon, Beacon, Sir C. Campbell, W. Bull, and Pescatore. Mr. Wiggins, Beadman, Pléne, Princess Mathilde, Roseum, very bright and showy, Empress Eugénie, and Madame Reiset, cerise with maroon spot. Mr. Weir's plants consisted of the Fancy varieties, were from 2½ to 3 feet across, and in very fine bloom. The kinds were Attraction, Celestial, Queen of Roses, Acme, Carminatum, and Jenny Lind.

Collections of Azaleas in small pots were exhibited by Messrs. Lane and F. & A. Smith, the former having also a collection of hybrid Rhododendrons, while Messrs. Smith had a new Rhododendron called Queen of England with white flowers 4 inches in length by at least as much across, and five in a head. A first-class certificate was awarded for this. Mr. Parker, of Tooting, likewise exhibited several plants of his charming large-flowered, bluish variety Countess of Haddington.

Of Auriculas Mr. Turner had examples remarkable for their vigorous trusses and large pips of Mr. Marnock (Turner), Sir Isaac Newton (Strong), Headly's George Lightbody, Negro (Turner), Bessy Bell (Spalding), and Sophia (Spalding); in addition to which he had a fine collection containing Lightbody's Meteor Flag and Fair Maid, Waterhouse's Conqueror of Europe, Popplewell's Conqueror, Turner's Webster, Dickson's Duke of Cambridge, a charming variety, and several others, with large pips. Mr. Butcher, Camberwell, and Mr. James likewise exhibited good sixes. Two new Alpines from Mr. Turner, Titian and John Leech, both very fine, particularly the latter, which is a bold flower, were awarded first-class certificates; and Master Hole, a rich maroon self, and Rev. J. Bramhall, green-edged, had second-class certificates. Robert Trail, grey-edged, came from Mr. Butcher, but did not receive an award.

Of other objects stands of Fancies were shown by Mr. Hooper, of Widcombe Hill, Bath, Ayres, Biggleswade, and James; Calceolarias of a fine strain by Messrs. Dobson & Son and James; Cinerarias by Mr. Wiggins and Mr. James; Amaryllis by Mr. Parker; Begonias by Mr. Wheeler; flowering and ornamental-foliaged plants by Messrs. Williams, F. & A. Smith, Wheeler, and Stone; Palms by Mr. Bull; and Ericas and a large plant of the ornamental yellow-flowered Genista Everestiana by Messrs. Low.

Foremost among rare plants were four beautiful Alpines from Messrs. Backhouse, of York, whose collection of such plants is probably the richest in the country. These were Andromeda hypnoides, a native of Lapland, not much higher than a moss, and bearing charming little pendulous white flowers with a red calyx; Primula ciliata from Switzerland bearing numerous bright purplish crimson flowers and having a very brilliant appearance; Narcissus juncifolius, with yellow flowers, found in stony pastures on the Pyrenees; and Primula farinosa acaulis, from Cronkley Fell, Teesdale, Yorkshire, having pale lilac flowers produced close to the surface of the soil. For these a first-class certificate was awarded. Mr. W. Paul had a similar award for Raphiolepis ovata, a Japanese plant, which was noticed in the report of his nursery in our last volume for its thick leathery dark green foliage, but now bearing several large racemes of white flowers, the plant being only 18 inches high. Deutzia crenata flore pleno, noticed at page 306, and very ornamental by its numerous white drooping flowers, also from Mr. Paul, was awarded a medal. Mr. Bull sent a numerous collection, and received first-class certificates for his remarkable Hose-in-hose Mimulus, for Aubrietia purpurea variegata, and Salvadora persica, all of which have been noticed in previous Numbers; also for a Rhododendron called Thibaudiensis, with tubular orange flowers, Primula intermedia, and Woodsia polystichoides Veitchiana. From Mr. Williams came Gymnogramma Parsonii, Peperomia arifolia, Anthurium magnificum, with deep green silver-veined leaves, Asplenium alatum and philippense, and Phoenicophorum sechellarum, a Palm with noble foliage—one of those grown in Belgium for baskets in rooms—all of which received first-class certificates, and several other interesting novelties. An Auricula called nigricans plenissima, with very double flowers and nearly black, and Petunia Blotch, with a large rosy purple and white flower, a very promising variety, were shown by Messrs. Smith, of Dulwich, who likewise exhibited several new Azaleas, of which Richard Cobden and Mr. Marnock were desirable varieties. Cineraria Dark Beauty, a

very good deep rosy crimson self, was shown by Mr. Wiggins; and a white-flowered *Hydrangea japonica* by Messrs. E. G. Henderson, who received a first-class certificate for it, also hybrid *Verbena Ariel*, with rosy lilac flowers, and which, being of very dwarf habit, is likely to be useful for bedding. *Anbristia græca*, with pretty purplish-lilac flowers, exhibited by Mr. Thompson, of Ipswich, received a first-class certificate; and a similar award was made to Mr. Turner for his red *Bougainvillea* and for *Fancy Pelargonium Sunrise*. Lastly, some well-filled flower-vases were shown by Miss Williams, of Holloway, and the Conifers exhibited before the last Floral Committee at Kensington by Mr. Ayres, of Biggleswade.

The conservatory, we may add, was gay with Azaleas and other flowering plants, whilst the grounds were in their usual good keeping.

SALT APPLIED IN EXCESS.

HAVING last winter a quantity of waste salt, sweepings of a bacon store, I had it spread over the kitchen garden and two empty beds on the lawn intended for summer bedding plants, and a nice mess it has made. The first sowing of Peas came up only in patches. I find where missed lots of round bits of rotten pulp. The second sowing is not up after four weeks, and I find them green and whole, some germinated, others not, but very salt. Of other seeds there are no signs as yet, but the weather has been extremely dry and hot.

The two flower-beds not being needed until May, I sowed with annuals to lift into the borders to replace bulbs, &c., or to be pulled up when interfering with bedding plants, these seeds have not appeared. They consisted of *Clarkias*, *Nemophilas*, *Candytufts*, &c., though some seeds sown elsewhere have nearly all appeared.

What should I do? Will the salt hurt *Verbenas*, *Geraniums*, and *Calceolarias*, put in next month? May I expect rain, if it ever will rain as in the good old times in these parts, to wash the injurious excess of salt down out of the way of doing mischief? In the hope of this having been somewhat accomplished already, I have resown Peas in the same ground, for I believe the salt was liberally spread over all the unoccupied space of the kitchen garden. Peas, Parsnips, Carrots, Onions, Radishes, &c., are possibly all killed, perhaps not. Do you think it likely? In any case I am not likely to try another experiment of the sort. I intended the centre of a bed for a very fine large *Cineraria maritima*. I suppose the salt will not hurt that.—PRETTY PICKLE.

[You remind us of a farmer whom we knew in Essex, who tried salt as a manure for Potatoes. He put in the sets by means of a dibble, and then had the holes filled with salt. His Potatoes shared the fate of your Peas, &c. As a manure salt should not be applied at the rate of more than twenty bushels per acre; but even that we consider an excess. Ten bushels applied to that space annually is far preferable. The heavy rains of the year will probably wash down the excess in your soil, but we would not trust to that. We would trench the ground fully two spits deep, bringing the lower spit to the surface. We would not try even *Cineraria maritima* in a soil so pickled until it was trenched as we have advised.—EDS.]

MY PLANTS,

AND HOW AND WHERE I FOUND THEM.—No. 2.

"What! March again!"

"Ay, with all speed. I hate the crowded town:
I cannot breathe shut up within its gates,
Air,—I want air, and sunshine, and blue sky,
The feeling of the breeze upon my face,
The feeling of the turf beneath my feet,
And no walls but the far-off mountain-tops,
Then I am free and strong,—once more myself."

BEFORE I started upon my expedition, I armed myself with three most necessary adjuncts—a large basket, such as they make in Staffordshire, and which are both pretty and strong; a trowel for the more obstinate roots, and, perhaps, rather a novel implement to my botanical readers, but which I used my wits admirably for extracting the more

delicate Ferns from between the loose stones of which these walls are made—a large screw-driver! This may provoke a laugh from the theoretical, but not from the practical botanist who has sought to disengage, gently and carefully, the tiny fibres of the delicate Ferns which cling to, and insert themselves between stones, which, piled one upon another in many places in North Staffordshire, form an inexpensive and durable protection to the fields or roadside. The varied and numerous recesses thus formed shelter many a fragile plant.

There are two pieces of wall near the village of Upper Team, which are full of the loveliest specimens of *Lastrea Filix-mas* possible. I feel most culpable when I think of the ruthless manner in which I extracted root after root from this natural fernery; but I was constantly fancying some new and wonderful discovery was in store for me in this hide-and-seek home of fairy plants. As with that "faire" lady of the old, old time, temptation was strong, and like her I thought that to possess was to be made wise, like her, I, also, was doomed to disappointment, the specimens being immature fronds of *Lastrea Filix-mas* in every stage of development, and merely varying in size or form according to the sterility or fruitfulness of the soil from which they sprung; and here I may mention how much anxiety, disappointment, and trouble these aforesaid Ferns give the tyro in botany. Their innumerable freaks, their change of shape, feature, and size, although really belonging to the same family would warrant the belief that they were the descendants of old Proteus. The *Athyrium Filix-femina*, or Lady Fern, is, perhaps, one of the most capricious; but whatever form it takes each variety has some peculiar beauty. How often has my husband, ever anxious to bestow pleasure, been saddened in his eagerness to present me with some new specimen, by my sorrowful decision that it was only a variety of "those deceitful *Filix-feminas*." I have found very decided specimens of the variety *rheticum* and *molle*, by the roadside between Cheadle Common and Great Yate. Here, also, is the *Ling*, the *Erica cinerea*, and *E. tetralix*, all springing from a bed composed of the most lovely Mosses conceivable, one of them being that beautiful and silvery kind which is such a pleasing contrast to the darker shades of the green varieties. I have thought as I strolled along amongst these humble children of nature, that they each preach their little sermon of love and kindness, which, if we will receive it, may enter into our hearts and bring forth as much fruit as a longer discourse from the eloquent lips of a human teacher. I have a favourite piece of poetry upon the mutual help which these lower orders of God's creatures afford each other; it is so prettily told that I transcribe it for those who may not know it.

"There was Fern on the mountain, and Moss on the moor;
The Ferns were the rich, and the Mosses the poor;
And the glad breeze blew gaily—from Heaven it came—
And the fragrance it shed over each was the same;
And the warm sun shone brightly, and gilded the Fern,
And smiled on the lowly-born Moss in its turn;
And the cool dews of night on the mountain Fern fell,
And they glistened upon the green Mosses as well.
And the Fern loved the mountain, the Moss loved the moor,
For the Ferns were the rich, and the Mosses the poor.
But the keen blast blew bleakly, the sun waxed high—
Oh! the Ferns they were broken, and withered, and dry,
And the Moss on the moorland grew faded and pale;
And the Fern and the Moss shrunk alike from the gale.
So the Fern on the mountain, the Moss on the moor,
Were withered and black where they flourished before.
Then the Fern and the Moss they grew wiser in grief,
And each turned to the other for rest and relief;
And they planned that wherever the Fern roots should grow,
There surely the Moss must lie sparkling below.
And the keen blast blew bleakly, the sun waxed fierce—
But no winds and no sun to their cool roots could pierce.
For the Fern threw her shadow the green Moss upon,
Where the dew ever sparkled undried by the sun;
When the graceful Fern trembled before the keen blast,
The Moss guarded her roots till the storm wind had past'd.
So no longer the wind parch'd the roots of the one
And the other was safe from the rays of the sun.
And thus, and for ever, where'er the Ferns grow,
There surely the Mosses lie sparkling below;
And thus they both flourish where nought grew before,
And both deck the mountain, the woodland, and moor."

I remember taking one walk in November in the locality mentioned above, a small fine rain was falling, but my husband assured me I should be amply rewarded for my uncomfortable expedition, by a treat which he had in store for me. A brace, then, to grumbling! Do we not know, "There

is no catching trout without wetting one's trousers?" After plodding along for about a mile under the protecting care of our umbrellas, we turned down a short road. Upon stepping over the Moss and Heath by its side we found a tiny path close under the hedge; following it, there on the bank, peeping out from their leafy covert, were the most gorgeous orange and golden fungi! orange when in the earlier stages of development, and golden as the plant became more fully grown. Lower still on the ground were purple, brown, yellow, and white fungi of a smaller kind. Every spray was bent with fog and rain, to me it was a fairy place, with its pearly drops, dripping, dripping, slowly dripping, tenderly and refreshingly on these grateful tenants of the soft sward beneath them. I was most anxious to have preserved them, but was ignorant of any satisfactory method. Turning from this melancholy month to bright skies and warm weather, let us review this same roadside and the neighbouring moorland in the warm and pleasant months of June and July.

"Smiles the earth, and smiles the waters,
Smile the cloudless skies above us."

Let us be off again, basket in hand, with light footsteps, and happy faces to see what plants we can add to our hortus siccus. The results I must reserve for the next page of my notes.—ALICE.

MESSRS. HENDERSON'S TULIP EXHIBITION AT THE ROYAL HORTICULTURAL SOCIETY'S GARDENS, SOUTH KENSINGTON.

To the lovers and cultivators of spring flowers this exhibition will prove a rare treat. On Tuesday last the collection of Tulips was hastening to its prime; and if the weather has not proved too hot and promoted their decay, a visit to the gardens will gratify every person who will go and see them. There is a vast variety of shades of colour—brilliant, gay, and sombre. The colours have been arranged with good taste. The delicacy of the white flowers is exquisite. Now is the time for the amateur to make notes and take down names or numbers of these bulbs; but there must be no delay. The Tulips in the centre of the garden, which are the property of the Society, are very beautifully and tastefully arranged. They have the advantage over Messrs. Henderson's collection in their position among the green leaves, and have also had the benefit of more sunshine. The Society must feel much indebted to the firm which has so liberally supplied the barren ground of their garden with such a display; and it is greatly to be wished that this magnificent effect will encourage the amateur to cultivate this most brilliant and easily managed spring flower.—X.

EMIGRATING TO NEW ZEALAND.

IN your Journal some months since is a question from "J. C.," asking information respecting New Zealand, and whether it is a field for emigration.

1. He asks, Can Strawberry plants be sent out? I reply, Yes, they have been, and can be sent again.

2. Is it advisable to take tools? Decidedly yes, as he can get the best in England and select them himself, whereas in New Zealand you are obliged to put up with whatever there may be in the market. Especially he should bring his own spades, as most of those sent out are sent for sale and not for hard work. At the same time we are fast improving in the quality of tools of all kinds.

3. Does Quick thrive in New Zealand? Yes, exceedingly well; under proper management you have a hedge at four or five years old equal to seven or eight years in England.

4. Should a person bring his own seed out, and what sorts? A person never does wrong in bringing seeds of every kind of prime sorts except Beans, as there are plenty grown around Wellington.

5. Can settlers grow their own grass? Yes, there is a considerable quantity of Cocksfoot, Timothy Grass, and all sorts of Rye Grass saved every year. Clovers are imported from England. Any person coming out with the intention of farming in the country should bring with him the Poas and Fescues.

6. Is it a place for emigrating to? Any steady persevering man can get on, especially if he has a family of boys to assist him in his out-door work. Girls can obtain situations the moment they land. If he is a good gardener I think there will be plenty of employment now, as the seat of government is removed to Wellington, which will necessarily cause gardeners to be more in request.

Our fruit season has been very excellent this year for all kinds, especially stone fruit, and the weather has been very warm; but we have had an occasional shower in the night lately. I also send you experiments made by myself to see the influence of the moon on vegetation.

Sowed Sangster's No. 1 Pea. First row sown thirty hours before new moon. Second row sown four days after new moon. Third row sown, moon ten days old. Fourth row sown, moon eleven days old. Fifth row sown eight hours before the moon was at the full.

No. 1, five days coming up. Flowered on the 20th of November.

No. 2, four days coming up. Flowered on the 22nd.

No. 3 row, sown when the moon was ten days old, four days coming up. Flowered on the 29th and 30th.

No. 4 row, sown when the moon was eleven days old, four days coming up. Flowered on the 30th.

No. 5 row, sown when the moon was within eight hours of being full. Flowered on the 1st of November.

Gathered the first Peas, about equal from each row.

The first row was 57 days before gathering; the last row was 41 days.

I consider, therefore, that the best time for sowing is just before the moon is at the full; but I write under correction, and should be glad if some of your numerous experimentalists would give their opinion.

With this you will receive our usual summary; and you will perceive the noble race that the philo-Maori party in England so much eulogises have committed another brutal murder. They, the Maories, instead of nobility of soul, are cowardly, mean, and treacherous, and the means that have been used to preserve them will cause their entire destruction as a race. We old colonists are sorry for it. We have endeavoured to the utmost of our means to be friendly, but it is of no use.—VERONICA, Wellington, New Zealand.

A WORD ON HOTBEDS.

EVERY one who has to do with hotbeds early in spring, experiences more or less difficulty in procuring a supply of fermenting material. Where early Cucumbers and Melons are required from the hotbed, to say nothing of the vast quantity of bedding and other plants needed for the floral display of summer, how often does one find the supply inadequate to the demand.

I will now briefly describe how I have managed with a very limited quantity of such material to propagate about three thousand plants since the 3rd of February. I wished for every particle of room afforded by a pair of two-light frames, each measuring 7 feet wide by 6 feet 3 inches long; but the greatest drawback was the dung being scarcely sufficient to form one bed in the ordinary way; but to make the most of what I had, and also to procure the desired space, I erected a stand for each frame. The stands were formed thus—four posts were let into the ground to the depth of about a foot and well firmed, the height of the posts above ground being 3 feet. These posts were fixed at each corner of the frame, and bearers were nailed at the back and front, and likewise along each side, for the frame to rest upon. The side bearers were flush with the frame, while those at back and front were allowed to go partially within the frame in order to form a resting-place for the soil-bearers, which consisted of a lot of old dry spruce fir tops. These were cut to the exact length of the frame, and laid in an inch apart, and on them some spray was laid crosswise; then a little pared turf grass side downwards, and finally the plunging material. It will be observed that there was no fermenting material under the frame. 2 feet 6 inches was left between each frame for the reception of dung, which when well shaken to pieces fermented freely and answered equally well for both. The rest of the frame received a lining 3 feet at the base tapering to 1 foot 6 inches at top. I contemplated

raising the dung to within 2 inches of the frame top, but was unable to do so for want of material. By obtaining droppings daily from the stable the desired height and heat were soon attained, and the heat of the bed has since been easily kept up by the incorporation of a few barrowloads of dung which accumulated in the course of twelve or fourteen days. The heat has been and is still very uniform, and answers admirably for Melons and Cucumbers. The stock of plants propagated since the 3rd of February consisted of variegated *Geraniums* of various kinds, *Chrysanthemums*, *Fuchsias*, *Verbenas*, *Lobelias*, *Dablias*, *Gazanias*, *Ageratums*, *Heliotropes*, *Variegated Alyssum*, *Begonias* of varieties, *Gnaphalium lanatum*, *Centaurea* of sorts, &c. The last of the whole batch was potted off on the 1st of April. The plunging material having been removed from the frames, was replaced with some appropriate for the culture of Cucumbers and Melons, which are now the sole occupants. These few notes may be of service to some of your amateur readers, although the system is by no means novel, for seven or eight years ago I saw it adopted with good results at a small place in Surrey.—JAS. BECKETT, *Cowdenknowes, N.B.*

EXTRACTS FROM SIR W. J. HOOKER'S REPORT ON THE ROYAL GARDENS AT KEW DURING 1864.

THE number of visitors to the Royal Gardens during the past year presents an increase of 72,246 over that of 1863; and was distributed as follows:—

Total number on Sundays	218,308
Total number on week days	254,999

BOTANIC GARDENS.

The most important change which I have to mention in this department, and indeed in many respects the most important that has occurred since 1841, when I was appointed Director, has been the retirement (owing to an affection of the eyes), of our able and highly valued Curator, Mr. John Smith, who, for upwards of forty years has superintended all departments of the Royal Gardens, and whose services and fidelity have been recognised by the Treasury in granting him the highest scale of pension. Indeed, previous to my taking office, Mr. Smith's services to the Gardens and to science were mentioned with approbation by the Commissioners, whose report on the condition of the Royal Gardens was presented to Parliament in 1838; and they especially drew attention to the fact, that to Mr. Smith alone (then a foreman) was due the credit of having named any of the plants, whether for the interest of science or the instruction of the public.

As may well be supposed, it has been found impossible to obtain another curator who combines with the necessary amount of skill as a cultivator, and efficiency as a general manager, that knowledge of rare, curious, and useful plants which our late Curator so eminently possessed. But his successor (also Mr. John Smith), late head gardener to his Grace the Duke of Northumberland at Syon House, not only bears the highest testimonials for skill and ability as a horticulturist and as a general manager, but has further long been known to myself and other botanists as having that special fondness for the cultivation of tropical and economic plants, for which the Syon gardens have long been celebrated throughout Europe.

I have only to add that Mr. Smith, who entered upon his office on the 16th of May, has proved himself eminently qualified for the curatorship, and is rapidly acquiring that special knowledge for which his predecessor was distinguished, and which experience alone can bring.

About 4000 live plants and 4600 packets of seeds have been distributed.

Steps are being taken to introduce the *Ipecacuanha* into Ceylon and India. Young plants have been received from Mr. C. H. Williams, of Bahia, and are being propagated for transmission.

The Cork Oaks, mentioned in my last report as having been sent out at the request of the Government of South Australia, have arrived in excellent condition, and are thriving. Under the direction of George Macleay, Esq., similar cases of live Cork Oaks have been sent to Victoria, Sydney, and Queensland; of these the second alone has

failed, and other cases are now preparing to be sent there; those sent to Victoria and Queensland have arrived in good condition.

Most flourishing accounts of the *Cinchona* plantations continue to arrive from India.

In the Nilgherries, Sir Wm. Denison informs us, that though the country had in April last suffered from 112 days' drought, yet the *Cinchona* plantations had not been damaged; and that the plants were being propagated at the rate of 30,000 to 40,000 monthly. From Ceylon Mr. Thwaites writes that in September last he had 190,000 plants, the tallest 6 feet high;—that applications had been received for 23,500 plants, of which 9000 had been supplied; and that he expected to issue 20,000 monthly.

HERBARIUM AND LIBRARY.

The scientific duties of the Royal Gardens continue to be the most onerous connected with the establishment; owing to the incessant demands for the names of plants in our own and other gardens, and of those collected by travellers and explorers on Government and other expeditions; and for information as to economic plants and vegetable products; in addition to the extensive and ever-increasing colonial and foreign correspondence and publications.

The principal works done in this department, or in connection with it, have been,—

1. The publication of the second volume of the *Flora* of the Australian colonies, by G. Benthams, Esq., assisted by Dr. Mueller, of Victoria, who continues to send his own Herbarium for examination, and all the newly discovered plants as they are received by him, with notes and observations, for this work. The third volume is in progress; published under the authority of the several Australian Governments.
2. The *Flora* of the Cape Colony, British Caffraria, and Natal, by Dr. Harvey, F.R.S., of Dublin, and Mr. Sonder, of Hamburg. The third volume of this will shortly appear, published under the authority of the Cape Government.
3. Dr. Grisebach's *West Indian Flora* is completed in one thick volume, and was published under the authority of the Secretary of State for the Colonies.
4. Mr. Thwaites' *Enumeration of Ceylon plants* is completed and published.
5. The first volume of a *Handbook of the New Zealand Flora*, prepared by Dr. Hooker at the desire of the Government of that colony, is now published; and the second volume is in course of preparation.
6. The ninetieth annual volume of the "*Botanical Magazine*," being the twenty-fourth prepared at Kew, has been published by the Director, with seventy-two coloured plates of new and rare plants that have flowered in the Royal and other British gardens.

Of other works in preparation the most important are:—

7. The *Flora* of British India, by Dr. Thomson, F.R.S., under the auspices of the Secretary of State for India.
8. The outlines of the *Flora* of tropical Africa, by Professor Oliver and Dr. Hooker.
9. Dr. Mueller, of Geneva, has spent three months at Kew, for the purpose of describing the *Euphorbiaceæ* for M. de Candolle's *Prodromus*.
10. M. C. de Candolle, of Geneva, has described the natural order of *Peppers* for the same work.
11. Mr. Lowne has named and arranged his large *Palestine* and *Lebanon* collections, made during the Rev. Mr. Tristram's expedition.
12. Dr. Kirk has rendered us great service in arranging and naming his own and other *East African* collections, and the *Mauritius* ones of the late Dr. Ayres, Judge Blackburn, and others.
13. Mr. Spruce is residing at Kew for the purpose of arranging his *Andean*, &c., collections.
14. Dr. Triana of Bogota was for several months engaged on his *Flora* of New Grenada, published for the Government of that Republic.
15. The Japanese and Korean collections of Mr. Oldham, amounting to about 13,000 specimens, have been named and distributed to various public museums.
16. The distribution of the great *Herbarium of the East Indian Company* has been proceeded with; and that of the *Kashmir*, *Punjab*, and *Himalayan* collections of Dr. Falconer commenced.

The principal contributions to the Herbarium and Library have been:—

1. The collection of specimens, drawings, and MSS. of Caricae, of the late Dr. Francis Boott, F.L.S., formerly Treasurer of the Linnean Society; presented by his widow. It is impossible to over-estimate the value of this gift. Dr. Boott devoted the greater part of his life to the study of this particular and very difficult tribe of plants; he formed a complete and beautifully arranged and named collection of the species from all parts of the world; and was for thirty years the standard authority for their nomenclature. At his own expense he caused to be prepared in Paris and London a superb series of folio drawings of all the species, of which upwards of 400 were published, with descriptions, in three volumes, and privately distributed, also at his own expense. The entire number of drawings amounts to upwards of 700.

2. The Herbarium and MSS. of the late Dr. P. B. Ayres, colonial surgeon of Mauritius; presented by his widow. Dr. Ayres spent upwards of ten years in the Mauritius, during which time the whole of his leisure was employed in exploring its botany, and describing the plants for a Flora which he intended to publish. This Herbarium, which is a very considerable one, together with the MSS., will prove of great use in the event of a Flora of Mauritius being published, which is in contemplation by the Colonial Government.

BARREN STRAWBERRY PLANTS.

At page 304 your correspondent "W. B." has thrown out some hints on barren Strawberry plants, and it may not be out of place here to mention what has come under my own notice.

A friend has a large garden, and some years since, when I was taking a walk with him in the garden and chatting on bee matters, my attention was also drawn to the fruit, which promised to be abundant. "But what is the reason you have no Strawberries?" These were at the time growing to the south of some Arbor Vitæ trees. "Oh," replied my friend, "these are some plants which my nephew sent to me five years ago." "Then they are too old; they ought to be transplanted." "But," said my friend, "there never was either fruit or blossom on them; they are male plants." "Oh dear!" rejoined I, "that is wrong. Transplant them, and you will see them grow into females." He did transplant them, and in two years afterwards he had the most abundant crop I have ever seen.—A LANARKSHIRE BEE-KEEPER.

FLOWER-GARDEN PLANS.

You have taken me rather at a disadvantage by publishing the remarks which I sent you upon flower-garden plans (which were elicited by your adverse criticism on borders in front of houses), as they were hastily written and I intended to write you a paper on the subject.

I did not wish to make any invidious remarks between "E. A. L.'s" design and the one from Houndstone House, Yeovil; but merely alluded to them as they happened to illustrate my ideas on the subject. I have, I am afraid, misled you to suppose that the design by "E. A. L." was one of my own, as I said I originally laid out the garden, and recommended that the border in front of the house should remain. Since then, however, all the ground in front of the house has been levelled into two terraces, the upper one for King Croquet and the Lords and Ladies of the Hoops, &c.; the other has been occupied by the design in page 214, of your Journal, which is "E. A. L.'s" own. When I originally laid out the garden, I had to cut out beds adapted to the uneven surface of the ground, and they were rightly done away with when the ground was levelled. I may, therefore, without prejudice, defend "E. A. L.'s" design, which is one particularly well adapted for the piece of ground it occupies, which is level with an irregular outline.

And now I would add a few remarks upon the rules which I laid down for flower-garden plans, and also upon your criticisms.

First. Every bed ought to make a perfect and uniform shape. By this I mean, that if it is divided by a line down

its centre, one half ought to be equal to the other half; circles, squares, ovals, quatrefoils, trefoils, &c., follow this rule, as do nearly all geometrical figures. This is easily illustrated by architectural details, as windows, arches, staff ends, &c. When I use the word perfect, I do not mean to say that there are not other shapes more perfect or more beautiful, but that it does not require anything added to it to make it uniform. It is, therefore, perfect, of itself. A circle is perfect in itself, and is, perhaps, for bedding-out plants the best possible shape, but it is not beautiful, at least as far as the mere outline is concerned. The circle is not a beautiful figure in architecture, but a circular window filled with tracery and painted glass is, perhaps, one of the most strikingly beautiful features in many buildings—for instance the circular windows in York Minster. I adduce these as an example, because a circular bed, which is a very simple form and not beautiful in itself, is often made most beautiful by its setting with bedding plants, aided by other beds or the set of beds, of which it may be the centre.

2. Walks ought to form patterns as well as the beds. No doubt, as you remark, the walks will always form patterns, but very often the patterns of the walks are sacrificed to the beds, the beds being cut out with very little reference to the shape of the walks, merely leaving an irregular space, haphazard, after the beds are cut out. The walks are generally intended, I presume, to enable persons to walk amongst the flowers, to enjoy their beauty, and examine them closely, or to allow the gardener to work amongst the flowers without treading on the beds. Now, in many plans I have seen the grass left so narrow in places between scroll-beds, that no lady could walk between the beds to pick a flower without brushing the beds behind, and even a gardener at bedding-out time would find his feet in the bed behind him if he knelt down to plant. I say, then, that walks ought, as far as possible, to be of a uniform useful width, one which will admit a barrow or a mowing-machine, and they should not be merely spaces left at random. A flowing artistic outline may sound well theoretically, but practically it does not work so well, unless it is in Box and coloured gravels for winter gardens. Patterns, that would look well for ladies' embroidery, would not leave suitable spaces for ladies' crinolines, and we do not wish to banish the fair sex from our gardens.

3. All pointed or unequal-shaped beds ought to be avoided. I own that "E. A. L.'s" beds have a good many points, but none of them present any difficulty in planting, as the engraver by diminishing the size of the beds, 2, 2, &c., has made all the points in the set, 2, 3, &c., much more acute than they really are. I do not think any angle over 60° a sharp point, especially if not too much prolonged. Now, in the plan, page 232, the points, 6, 6, and the ends of the scroll, 4 and 3, are prolonged points—that is to say, if the bed was 2 feet wide 6 feet from the end, it would be gradually diminishing from these to the point. Now, suppose you tried to plant 4 with *Calceolaria* and edge with *Purple King*, the edging would run to a narrow single line. In fact, with the proposed planting of *Calceolaria Aurea floribunda*, the plants would soon overgrow the points, or else the last foot of the points would have to be left plain soil. No set of beds can well be made without angles, but the less the angles run into prolonged points the better.

Rule 4 requires no explanation, as I have already referred to it, and I think you quite agree with me as to the truth of it. I alluded to the division of animals through the vertebrae, and leaves through the midrib to illustrate what I meant by a uniform bed, not by a set of beds. I quite agree in preferring that a set of beds should be capable of being divided into four equal parts by lines drawn at right angles through the centre point. It does not necessarily follow, however, that these lines should be on the walks, otherwise the walks must be nearly always cruciform; but if they fall upon beds they must divide them equally. The plan at page 214 follows this rule, and two lines through the centre of the quatrefoil 1, at right angles through 2, 13, 14, &c., will divide it into four equal parts. I quite agree, however, that the quatrefoils 16, and circles 12, 12, 13, 13, and the bands round are not necessary as far as making a perfect figure, and think that your rule, that in a set of beds, no clump ought to be capable of removal and another substituted in its place without injury to the set, is a perfectly

true one. It so happens, however, that in "E. A. L.'s" plan it was desirable to lengthen the bed more one way than the other, owing to the space on which it had to be cut. The bands, consequently, were run round the two circles, 13, 13, and not round 12, 12.

The plan I have given is purely geometrical, and is adapted to fill any space where there are no very definite outlines, although, of course, it would fill a square or a circular piece of ground very well.

It will also answer either as a centre or outside in a set of three beds to fill a long terrace. Three distinct sets of beds, the two outside ones being similar or nearly similar, very often fill a long terrace garden or parallelogram better than one continuous figure. My remarks may seem chiefly to apply to geometrical gardens on grass. I admit that with Box and gravel greater irregularity is admissible; but, still even with scroll-beds, I think that one half ought to be made to balance the other as nearly as possible, and no scroll-bed ought to be made so large as to require planting in different divisions.

Of course, to the end of time there will be "*quot homines, tot sententiae*."

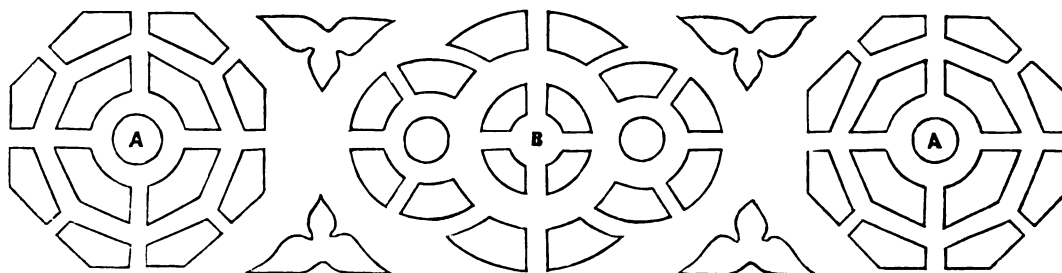
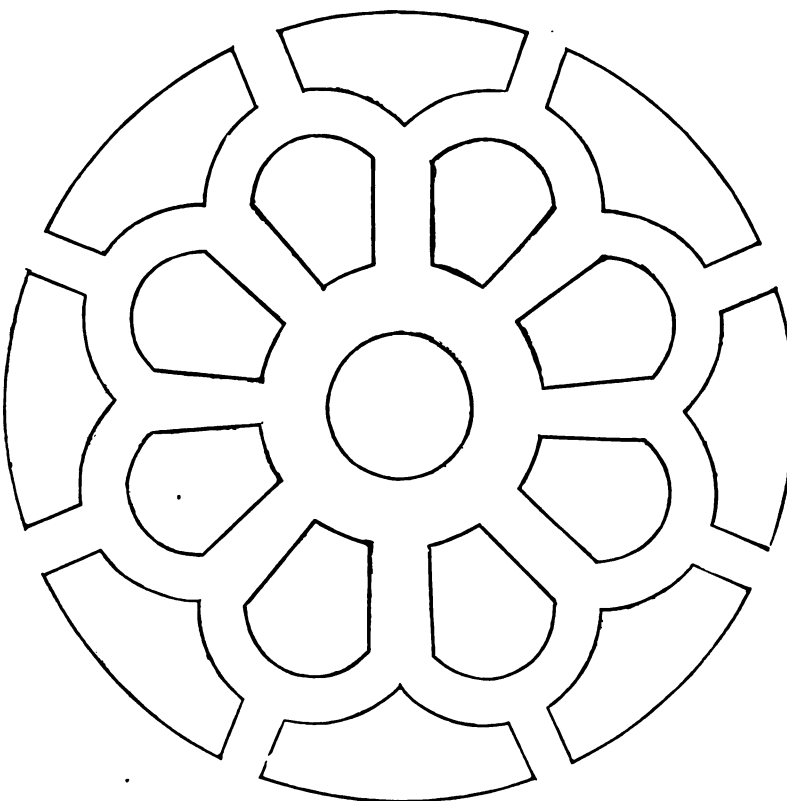
I do not think, however, we differ very much on the whole, unless it is with the exception, that I am still an advocate for creepers against a house, except in cases of large mansions or houses with a good deal of architectural

border looking untidy, or desolate, in the winter. I think few lovers of Roses would like to be without them on the walls of their houses. Of course, my remarks do not apply to large mansions with gravelled terraces, balustrades, &c., in front, but to nine-tenths of the ordinary run of country houses. In fact, I only know of one or two near here, one of which is Castle Howard, the seat of Lord Carlisle, that would not be better of a few creepers, as Roses, &c. I am

not an advocate for smothering a house with Ivy and other rambling creepers, but to have a few choice creepers and keep them distinct, as Roses, Wistaria, and Trumpet Honey-suckle, &c. — X. Y. Z.

P.S. Since writing the above, I have found a tracing of a garden which I designed and cut out last year, and I send it instead of making any new design, as it exemplifies what I have said with respect to three sets of beds forming a good plan for a long level terrace. This plan was cut out on a terrace about 45 feet broad facing the house, a broad gravel walk lies between the house and the terrace, which is sunk about 2 feet below the walk, and slopes very slightly

from one end to the other, the fall being about 1 in 100. The walls of the house are trellised, and there is a border in front, the trellis and border being continued beyond the house parallel to and up to the end of the terrace. Beyond



A A, Raised Beds.

B, Ornamental Vase.

beauty. My own is a new house, and I flatter myself not unsightly, but when there were two or three hundred blooms of Général Jacqueminot all out at once on plants which I have trained up the house, it was more adorned than by the best architectural features. When bedding plants are used in the borders where the creepers grow, other plants can, without very much trouble, be made to supply their place during the winter and spring months. Variegated Arabis is a permanent edging that looks well nearly all winter, and a few bulbs and spring flowers, and small plants of variegated ivy greens, as *Hedera* or Box interspersed, will prevent the

terrace to the south, at a lower level, is another terrace for croquet, surrounded by a few standard Roses in small round beds which carry on the eye from the garden above. I will not trespass on your space by any further explanation, but send the plan as it is.

[We quite agree in most of what you advance. As to the plans, we have no doubt the round group will look well when planted. In our opinion the circle is not only the simplest but the most beautiful of figures; the eye never tires in looking round it, and there are no jutting corners.

a long terrace group we much prefer the central figure
oup. There will always be many opinions on such
rs. It is always a pleasure to see such matters not
ably, but temperately stated. Perhaps like heterodoxy

and orthodoxy, we are all rather prone to make our own
"dory," orthodoxy, and other peoples "dories," heterodoxy.
We have striven against this failing in our Journal, and we
are glad to be so ably assisted by you.]

PALMS AS ROOM PLANTS.

RING our recent journey to and from the International
ress of Botanists and Gardeners at Amsterdam we
d some of the widely-famed nurseries of Belgium. On
ure occasion we shall place before our readers some
ral notes upon those establishments, but now we ask
ecial attention to only one subject they forced upon our

se.
I marvelled to see
ery great numbers
arf Palms in pots
were in the stoves
reenhouses of those
ries. They were not
specimen plants,
as we see at Kew
lsewhere, but vary-
height from a few
s to 2 or 3 feet. The
hey were in were not
than 6 or 8 inches
meter; and to keep
e supply we saw
rous pots with the
seeds, as usual,
y placed on the sur-
f the soil, and ger-
ing in those fan-
forms which so
cterise them.

on inquiring we as-
ned that this large
y of Palms was re-
l for the in-door
ation of the resi-
s of the Russian
erman gentry. The demand for such purposes may

preciated by the fact, that of one species alone, *Thrinax*
ne, Mr. Verschaffelt, of Ghent, has sold 20,000 during
st ten years, being an average of 2000 annually.

He assured us that they are the most manageable of
room-plants. They are infested by no insect; the well-known
dryness of a dwelling-room's atmosphere, so injurious to
most plants, has no perceptible effect upon the young
Palms. Then their leaves are of such a form and so
firm of texture that the dust may be removed from them

with a damp sponge,
readily and without fear
of injuring them. Nei-
ther is their price an
obstacle, for when of
a full growth for room-
decoration they cost only
about 4s. 6d. of English
money. The usual tem-
perature of our sitting-
rooms is sufficiently
high for their healthy
growth; and their
growth is slow, so that
years elapse before they
have to be removed to
be replaced by more
juvenile successors.

The following is a list
of some of those species
found to be most suit-
able for room-decoration,
and we are quite con-
vinced that if our nur-
serymen will obtain these
Palms from the nurseries
of either Mr. Van Houtte
or Mr. Verschaffelt, and
maintain a supply, it

would soon become an extensive branch of their business:—
Chamærops stauracantha, *Ceroxylon andicola*, *Thrinax ele-*
gans, *Phoniciophorum sechellarum*, *Chamædorea Ernesti-*
Augusti, several species of *Pandanus*



1, *Ceroxylon andicola*. 2, *Chamærops stauracantha*. 3, *Chamædorea Ernesti-Augusti*.

THE NEW JAPANESE EVERGREENS.

the introduction of new and untried plants that
ually will become universal favourites is often difficult.
the uncertainty whether or no they are hardy in this
te, the experience of every amateur who has tried them
who has taken a fancy to them may be worth inserting
our Journal." First and foremost come the *Aucubas*,
their many variations of blotchings. Some years ago

was sent out with large uncertain blotches on each
of the midrib, but it did not take the fancy of pur-
rs, for it was not nearly so effective as the old spotted

Now, indeed, there is more choice to please all fancies,
hether you select the *picturata*, with its centre golden,
ibata, with its edges golden, or the *himalaica* with its
deep green, glossy leaves—all are handsome. We
ry amateurs, with small gardens and small means,
long time can know new plants only by the catalogues
y stray chances of rushing to Henderson's or to
h's or other leading nurseries, and so are often puzzled
to distinguish plants very much alike in name, habit,
description. How, for instance, will you distinguish
ba *himalaica* from *japonica*? I knew the difference
bit and of growth, but which was which I could not

On visiting Garaway's nursery at Bristol the intelli-
foreman showed me, and I will now retail his informa-

The *japonica* exactly resembles in its growth the

well-known spotted kind; when in bloom the petals are
purple, and the spike very short—in fact, compare it with the
old sort in bloom and the resemblance is complete. The
berries are close-set on the branch and are oval. The *hima-*
laica is of freer growth; the leaves not so flat and more
pointed; the blossoms are on a longer spike, and the petals
are white or pinkish white, and the berries are round.
Garaways hope to keep a plant of *japonica* in fruit till
the June show, and if it do not charm the Bristol people
I shall be surprised; its growth and condition were so
perfect I would have walked six miles with pleasure to see
it. The difference of growth and flower is that of *Quercus*
robur and *pedunculata*. The plants sent out as *picturata*
having turned out to be male, to the surprise of the pur-
chasers, have enabled very many more plants to be fruited
than otherwise would have been the case, and, doubtless, in
time we shall from this source obtain new varieties of colour.

Having bought both the *himalaica* and *japonica* for the
Bath Park I can testify that both are hardy; neither have
had more shelter than being planted on the south side of a
wall; the leaves of the *himalaica* were shrivelled and brown
from the snow and frost, whereas *japonica* was quite unaf-
fected by the winter weather.

How can the catalogues promise that these plants shall
produce berries unless they supply at the same time a male

plant and instruct purchasers how to manage matters? Neither are monocious. By-and-by, when males are more common, it will be as well to have a spray of the male grafted in the middle of a bush of the female plant, should this be within sight of a house. I have lent out to a nurseryman my male to fructify his young females, but hope to have a stray bloom or two left for my own home plants that are just opening.

The *Elseagnus variegatus* will be a beautiful addition to our lawns. The growth of the reflexus is very peculiar. Here it has grown most freely, the shoots of last year were 6 or 8 feet long, and the frost did not hurt it the least. If they had been white instead of the peculiar dark brown, the effect would have been most pleasing; but it is always to be remembered that variegation is but disease, and brings with it the penalty of greater tenderness of constitution.

The *Euonymus ovatus aureus* has also proved perfectly hardy here, not influenced by the weather. Its branches being so brightly golden render it more marked in character than the old white variety.

Euonymus radicans variegatus becomes very charmingly tinted with red after much cold weather. It is as though every leaf had been shaded with a thin layer of lake. It is very hardy.

Eurya latifolia variegata I cannot speak of. I saw it in Veitch's collection, and much admired it, but the foreman was doubtful about its hardiness. The old *Eurya japonica* is perfectly hardy here.

Osmanthus ilicifolius in its varieties is also quite hardy. I had not seen the *aureus* till last week, and the shading of the leaves is very pretty, not margined as in the white. What are to be the blossoms? What the natural family? It looks so like a Holly.

The Umbrella Pine (*Sciadopitys*), *Retinospora pisifera*, and *Thuopsis*, all recently introduced from Japan, have all gone through the past winter without protection uninjured; but this tribe does not flourish in our valley so well as in drier climates, and more porous soil, so I have not interested myself in them so much.

The large-leaved Berberry (*Berberis Fortunei*) will prove a beautiful addition to the shrubbery. Its leaves are brilliantly tinged with red in the winter. While talking of shrubberies I would ask every one to see, and he will admire, *Forsythia suspensa*. This spring this shrub is most splendid. It far surpasses the old *F. viridissima*.

Like many other superficial folk I have written too much upon a subject of which I know but little, and have not referred to the variegated Ives and the Honeysuckles, also introduced by Mr. Fortune into our gardens. The tender tribes needing protection are beyond my province. My object is only to elicit further information from experienced pens.—B. J. S.

RAISING NEW VARIETIES OF FRUITS AND FLOWERS.

THERE is no class of men more worthy of respect than the really intelligent gardeners of this country, and considering the knowledge, patience, industry, and forethought required to make a good gardener, they cannot be considered a well remunerated body. I am not speaking of the conceited ignoramus who in his own estimation knows everything, but is far too knowing to let you into his secrets, or the pedantic who talk of Latin and science, but cannot show you a bunch of Grapes fit to put on a gentleman's table, who think growing a Peach or Apricot in a pot an impossibility, and themselves wonderful men, because by planting thousands of Verbenas, Geraniums, &c., they can produce a blaze of colour for a few weeks in the autumn. I would address myself to the really intelligent gardeners, and say I know some of you think that in the present day you are not paid in proportion to what is expected of you. Many of your class have turned nurserymen and florists to try and better their condition; some have succeeded, and many more have miserably failed. How is it so few of your body try to raise seedling fruits and flowers, or of the small numbers who do raise a good thing, how is it so few reap the advantage?

I wish to call your attention to the subject. No master,

I think, would object to see a dozen seedling Vines in his houses, a batch of seedling Geraniums on a spare shelf, or a few seedling fruit trees in a corner of his garden. Such a pursuit would keep up the interest and hope of a clever man.

But, some will say, What if we did raise a good thing, how are we to make money of it? Not, I would say, by giving a cutting to a friend or two, on condition of their keeping it to themselves, or selling the stock to the first man who offers you a £5 note for it. Few of our best gardeners have any idea of the value of a really good seedling of any popular fruit or flower.

My advice would be, Choose a respectable nurseryman, give him the plant, and get an agreement in writing that he should propagate and sell, taking all the trouble, and keeping an accurate account of all sales, and that in most cases you ought to equally divide the amount received. It is astonishing how many good things have got out without any one being much the better for their having been raised. Nor would the gardeners only be benefited by the plan proposed. It would be equally beneficial to masters, because it would tend to secure the services of superior men. Some one has said, that "virtue withers unless watered with rewards."—J. R. PEARSON, *Chilwell, Notts.*

PRESERVING DAHLIA TUBERS.

As I hear that during the last severe winter many persons have lost most of their Dahlia tubers, I think a few remarks upon my own experience may be useful. I have for some years endeavoured to find out the best plan for keeping these tubers. I have tried Apple-rooms, lofts, and all sorts of coverings to protect them from the frost, damp, and too rapid growth, but have always lost many of them. Last autumn I placed them on the ground in a Potato shed, and buried them in ashes, and although we have had a most severe winter, I have not lost more than one in fifty. The ashes of our Welsh culm, which are composed of burnt coal and clay, may be superior to other ashes. They have certainly answered the purpose well with me.—A SUBSCRIBER OF SOME YEARS, *Cardiganshire, South Wales.*

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

I NOT only wish to draw the attention of all gardeners to the great claim the Gardeners' Royal Benevolent Institution has upon them, but also to enlist the sympathies of all connected with horticultural pursuits for its assistance. I do so confident of its great usefulness, judging from the past, forming, however, but a small fraction of what this institution would be capable of effecting did it but receive that support from those for whose benefit it was originally established which might be expected from them. Why gardeners are so very lukewarm with reference to the institution I am at a perfect loss to know—why so wanting in that sympathy as a whole. At a very moderate computation there are at least eight thousand gardeners who have each the ability to support this excellent institution, and yet what is the fact? Of these and many more the number entered as subscribers is a little over three hundred! The pensioners, almost wholly gardeners and widows of gardeners, are as one to every six subscribers of the same class and calling. The subscriptions are but 21s. per annum to constitute a member, no other expense whatever being necessary for entry, &c. Truly a trifle, yet what comforts it is capable of securing!

Now, as to the good this Society has already done since it was first instituted in 1838, I will quote the statement of the Secretary, Mr. Cutler. He says:—"In reply to your inquiries, this institution first commenced granting pensions in the year 1840. The number of pensioners who have been pensioned since that time is 184; and the amount which has been paid away in pensions from January, 1840, to Christmas, 1864, is no less than £11,745 13s. 8d. The amount paid in 1840 was £9 6s. 8d., and the amount paid in 1864 was £778. This will give an average payment for the twenty-five years of about £468 4s. 8d., and an average

payment per pensioner of £80 3s. 10½d. The amount of the funded stock is £5700."

No comment on this statement is necessary. Of the above funded stock, £200 was laid out last year in consols. At the present time it is advertised to add three more pensioners to the list, already containing twenty-seven men and twenty-eight women, many of whom are entered direct upon the death of their husbands. As to the pensioners, I can speak from personal observation of the good this outlay does. How cheerful it makes the last days of many, who daily thank Providence for first influencing them to add their mite to the yearly subscription of the Gardeners' Royal Benevolent Institution, in no expectation then that the adverse winds of life would have compelled them to seek its shelter! With the administration of the institution I think none will find fault; whilst the result of every election is the return of the most needy, the widow at all times having an overwhelming majority, and the spirit which prevails amongst the subscribers is of the best.

In conclusion, I earnestly desire my fellow gardeners to give a few moments' serious thought to the claims which this institution has upon them, confident of its merits and the good of which it is capable.—W. EARLEY, *Digswell*.

GUTTERED FLOWER-POTS.

I beg leave to state that upwards of twenty years ago I invented my plant-protecting flower-pot, which I gave to the public, unfettered by patent.

My flower-pot was figured in "Johnson's Gardeners' Almanack" many years ago; but as it was figured without my knowledge its utility was only partly discussed. My flower-pot has a double rim forming a gutter, which is filled with water, protecting the plants from creeping insects. I also use the pots for forcing Sea-kale with great success. I use for a cover a flower-pot of the same form as the other pot, but single-rimmed and without a drain-hole. When this cover is on, the edge rests in the gutter, which is full of water, and so prevents the air and vermin from getting to the plants, and accelerates their growth.—JAMES STEPHENS, 9, *Plum Street, Harelock Place, Sheffield*.

STRAWBERRY PLANTS TREATED AS ANNUALS.

I grow all my Strawberries as annuals, and of all the early varieties have no difficulty in securing a tolerably abundant crop. May Queen and Black Prince were finally discarded last year, and, with great regret, I fear I shall have to add the beautiful and prolific Princess Frederick William to the number of the expelled. All three are with us so utterly destitute of flavour and sweetness, that I now rely upon Marquise de la Tour Maubourg, as the first Strawberry worthy of a place upon our breakfast-table. It is remarkably prolific and vigorous in growth, but somewhat deficient in size. Prince Imperial, after the same strain, is a marked improvement upon it both in size and flavour, and ripening as it does only a day or two days after Marquise, I shall feel obliged by your suggestions as to combating a serious drawback to its treatment as an annual, at least as grown here.

Of my plants this spring fully one-third show no signs of blossom, whether under glass or in the open ground, and, somewhat remarkably, on examining the barren plants I find that, without exception, every one of them shows two buds, the fertile plants as invariably showing only one. Now, does there occur a period in the life of the plant when it elects, as it were, whether to form one blossom-bud or two? Prince Imperial with us has evidently in the past season tried to make many duplicates, but either failing in the attempt altogether, or not perfecting the work, the results are two leaf-buds only. By what treatment can I secure either that each plant shall have its own bud, or, if more, that the increase of buds be in the direction of blossom rather than leaf?—FRUIT-EATER.

[Properly speaking, an annual is a plant, the seeds of which being sown, passes through all its stages of growth, fructification, and decay in the same season. We have our-

selves never fruited Strawberries as annuals except the Alpines, which often bear very freely in the autumn from seeds, sown in spring. The nearest approach to annual culture is, the taking the runners of this season and fruiting them the next. This is the general plan followed in the south for forcing Strawberries, and if the runners receive an equal amount of attention, they will fruit as well if not better out of doors. Unless in very light soils, however, we do not see much advantage in this practice out of doors, as invariably in loamy soils, even under the above circumstances, the second season's crop is generally better than the first. As to Prince Imperial not fruiting as you wish in-doors, or out of doors, but many showing no bloom, we can add little to what was stated lately in "Doings of the Last Week." If we had plenty to choose from, we would take no runners from these barren plants. We have long ago noticed, that plants which divide their crowns are more apt to be barren than those having only one stout bud or crown. The whole matter is somewhat mysterious, especially if all the plants, barren and fruitful, came from fruitful plants. We should not like to advance more than a supposition as to the cause of these double and triple crowns; but our present conviction is, that they generally occur from over-feeding and too much pot-room, which prevent the bud ripening, and thence the luxuriant growth. We have often gathered out of 4½-inch pots double the weight that some friends have obtained from plants in pots of double that size. It is impossible to give such plants too much light in the previous autumn, but it is very possible to make them too luxuriant. What say other correspondents?]

GARDEN PESTS.

ONE of the most destructive insects which infest the garden at this season of the year is the *Haltica nemorum*, commonly called the black flea or black fly, which is a small beetle-like insect, and most remarkable both for its agility and good scent, as thousands will jump to the ground in an instant just before you approach them. Broccoli, Kale, Brussels Sprouts, &c., have been literally covered with them. The destruction, however, which they have made on Peach, Nectarine, Pear, Cherry, and Plum trees is the most serious, as many trees of the first two at this place have been deprived of nearly every blossom. We have tried soot-water, lime-water, and tobacco to make the leaves, &c., distasteful, none of which, however, appear to drive them away. A good rain with cooler weather is, perhaps, the only thing to put a stop to their depredations. If any of your correspondents can recommend a method by which these troublesome pests can be either destroyed or driven away he will oblige myself and many others.—JOHN PERKINS, *Thornham Hall, Suffolk*.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE April meeting of the Entomological Society was held under the presidency of F. P. Pascoe, Esq., F.L.S., when donations to the library from the Royal Agricultural Society, the Linnean Society, &c., were announced, as well as M. Doleschall's Memoirs on the Diptera and Spiders of the Indian Archipelago.

The President exhibited an apparently new species of the Lamellicorn genus *Bolboceras* taken by Mr. Odewahn at Gwalor near Adelaide, South Australia, where it is found burrowing in the hard roads near that place, and coming forth only at night. The President had observed a similarity of habit in the European species *B. gallicus*, which burrows in the sand in the south of France. Mr. De Boulay had also observed these insects in Western Australia, and that they make a noise by rubbing, as he states, the pulvilli against the coxæ. The President also read a notice which had recently appeared in the "Athenæum" relative to the Rose-like Galls found on Willows in Cambridgeshire, exhibited at a previous meeting by Mr. Bond, and which according to the writer seemed to afford an explanation of the mediæval miracle of Willows blossoming like the Rose at Christmas.

Mr. F. Moore exhibited a small collection of Lepidoptera taken in the North-western Himalayas by Capt. Lang, in-

cluding a new species of *Chrysophanus* (one of the Copper Butterflies), a *Pieris* like *Cardaminis*, &c.; also two curious species of Moths (*Noctua* and *Geometra* sp.), the bodies and wings of which were covered with slender elongated fungi, which had sprouted out all over them. They had been found at Darjeeling by Mr. A. E. Russell. A large collection of Beetles, Butterflies, and Moths taken by the last-named gentleman in Bengal and the Himalayas was also exhibited by Mr. Ianson, amongst which were two new species of the singular genus *Epicopeia*.

Mr. W. W. Saunders exhibited six or seven different species of Galls collected by Mr. B. T. Lowne in Southern Syria in 1864. One of these upon a species of *Atriplex* was covered with a woolly-like growth; another upon a blade of grass was probably the production of a Dipterous insect; another, of a solid texture, on a *Tamarix* was possibly the nidus of a *Buprestis*; another, upon a *Reaumuria*, contained a mass of about thirty eggs of some species of Moth.

The President read a note respecting certain insects which he had noticed in July last when passing over the snow field of Monte Moro at an elevation of 8000 feet. Here and there in the snow was seen a sharply defined cylindrical hole, about an inch in depth, and at the bottom of each was either a small lump of matter resembling peat, or more frequently a Dipterous or Ichneumonideous insect. He conceived that the insects, settling on the snow, became torpid from its low temperature, and then gradually, or perhaps rapidly, sank into the snow, the holes being caused by the radiation of heat from the body of the insect. This explanation, however, although no other was suggested, did not meet with the general acceptance of the meeting.

Professor Westwood made some critical remarks on the recently published memoir by Dr. Karsten on the Chigoe or Jigger, insisting on the priority of his own generic name *Sarcopsylla* for the insect, in preference to that of *Rhynchoprion*, which was a synonyme of a genus of Ticks (*Acari*).

Mr. H. W. Bates read a memoir on the interesting genus *Agra*, belonging to the family *Carabidae*, in which he described the affinities and habits of this arboreal and nocturnal group, remarkable for lying concealed during the day in curled-up leaves, feeding probably on larvæ, and possessing the power of crepitating by a slight explosion, with a sensation of warmth, and staining of the fingers, when the insects are handled. He also noticed the external distinctions of the sexes, and described sixteen new species from the Amazon region of South America, thus making up a total number of 140 known species of this beautiful group.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE late drying easterly winds and the present clear warm weather have rendered it necessary to supply water to recently transplanted trees, shrubs, and vegetables, and also seedling crops, which are just making their appearance, otherwise they had better be allowed to remain in a dormant state until we have rain, as continued waterings bind the surface of the soil into a hard crust, impenetrable by air and very prejudicial to the germination of seeds. This evil may, however, be in some degree prevented by shading from the sun or covering the soil, so as to prevent evaporation as much as possible; frequent waterings are not then necessary, and the soil is kept in an open porous state, which is of the utmost importance. When the nights are warm, seeds, and herbaceous plants of all kinds, should be watered in the evening, so that the soil may gradually imbibe the water; but if cold nights prevail, an early hour in the morning is the best time for its application. *Broccoli*, as the present warm weather brings it forward so fast, some of it should be pulled up before it is full-grown and laid in a cool place, so as to prolong the season of use. *Cabbages*, when the soil is very hard between the autumn-planted ones it will greatly benefit the plants to fork between them, and after rain to earth up again. *Cauliflowers*, dig up the soil surrounding them with a fork, and afterwards give them a good soaking with water, to be repeated twice a-week during warm weather. *Celery*, all that has been lately pricked out to be shaded and watered until it take good hold of the ground. If it is required very early put

the plants singly into some small pots, and set them in a frame until they get roothold, when they may be fully exposed to the air, but to be kept well watered, or the plants will be apt to run before they attain any size. *Cucumbers*, where they are grown on dung-beds the frame will want raising to allow the plants room and a sufficient depth of soil. Trenches should now be prepared for plants to be grown under hand-glasses; they may be 2½ feet wide and 1 foot below the surface, to be there filled with prepared dung, leaves, and short grass to 6 inches above the surface; good light soil to be put beneath the glasses, and the rest of the dung to be covered with the soil that came out of the trench. *Dwarf Kidney Beans*, make a good sowing for succession; a few to be sown in a pan at the same time to fill up any vacancies. *Lettuce*, give a few of the earliest plants a good supply of water to bring them forward; some of the *Coss* may be tied up to form hearts. *Mushrooms*, keep a steady heat of from 60° to 65° where there are productive beds; continue to make fresh ones for summer and autumn use. *Radishes*, sow both Long and Turnip-rooted kinds; water beds from which they are to be drawn for use.

FRUIT GARDEN.

Trained fruit trees, especially Peach and Cherry trees, require particular attention at this season in regard to stopping, disbudding, &c., going over them two or three times so as to prevent a too sudden check to the flow of the sap, and to afford the fruit the protection of the leaves as long as it can be done without injury to the trees. Look sharply after green fly, and apply tobacco water the moment it is perceived. On light sandy soils, however, it may be kept in check by frequent waterings with the engine; but whatever method is pursued, see that it is resorted to before the pest becomes established.

FLOWER GARDEN.

Trees and shrubs recently transplanted to be watered and immediately mulched with short litter; and the rare and choice kinds to be shaded and occasionally sprinkled overhead with water in the morning. As it is more than probable that where much planting was intended part of it may yet remain undone, we may observe, that some kinds of evergreens may yet be safely removed, taking the precautions to water them at first planting, and occasionally afterwards, to well mulch the surface, and to damp the foliage. We have sometimes found *Hollies*, *Portugal Laurels*, *Evergreen Oaks*, *Red Cedars*, *Arbor Vitæ*, &c., take root more freely now than when planted earlier in the spring, when autumn planting cannot be effected. As a principle in the arrangement of colours, it is generally allowed that the various shades of orange and yellow will class well with the various purples and blues; whites are suitable with the blues, oranges, and reds; whites, however, derange the effect of the yellows, as also the violet shades; whilst the various red or rose-coloured flowers are, as far as colour is concerned, capable of forming a bed by themselves.

GREENHOUSE AND CONSERVATORY.

The conservatory plants are now making active growth, and should be liberally supplied with water. Those growing in prepared borders to be frequently examined to see that the roots are kept sufficiently moist. At an early hour in the morning give a good washing with the engine or syringe to everything excepting the plants in bloom, the house will then become dry and enjoyable by the forenoon; frequently clean over the borders, remove decaying leaves and flowers; let the paths, stone curbs, shelves, &c., be washed frequently, that the house may present an orderly appearance at all times. More air must now be given, and as the nights become warm allow a little to remain on; this low night temperature will do much to favour the growth of short-jointed wood, which in a house of this description, requiring to be frequently shaded, is difficult to obtain, and at the same time it will prolong the bloom of the inmates. Hybrid Indian *Rhododendrons* and Chinese *Azaleas* will now be in great beauty, and every care should be taken to preserve the blooms from damp and drip. Supply plants liberally with water at the roots, as during their blooming season they require large quantities. Plants out of bloom should be placed where they can enjoy rest for a short time before the new growth commences, otherwise they break

weakly. It should be remembered that when a plant flowers profusely its powers are much weakened, and a lapse of time after blooming, longer or shorter, according to the habit of the plant is necessary to enable it to recover its exhausted energies previous to forming a new growth.

STOVE.

Attend to the stopping and training of the plants, and afford free-growing subjects plenty of pot-room. Achimenes and Gloxinias filling their pots with roots will enjoy an occasional watering with weak liquid manure. Very little fire heat will now be sufficient if the practice of shutting up early in the afternoon is adopted. Proceed with the re-potting of Orchids as they may require it. Do not use the syringe too freely among those starting into growth, but keep the atmosphere thoroughly moist. See that the specimens on blocks and in baskets are not allowed to suffer for want of water.

PITS AND FRAMES.

Push forward late-propagated stock, and endeavour to keep the whole growing on slowly. The plants to be exposed to the weather as freely as circumstances will admit, but this should be done by degrees, and never to the extent of browning the foliage and drying up the tissues, and they should never be allowed to suffer from want of water.—W. KEANE.

DOINGS OF THE LAST WEEK.

SUCH a week of dog-day weather, a broiling sun, with a north wind, the temperature during the day reminding one of July rather than April. Where no shading was used, the demands on the water-pail were almost incessant. Strawberries ripening fast, with their pots in turf or moss, requiring water two or three times a-day. Pears and Plums are now in blossom, and Apples are swelling to the opening of their buds. Earnestly do we hope that we shall not have a cold, dreary, frosty May, after such a brilliant April. A few warm showers will make all kinds of vegetation proceed amazingly. Without such showers we shall soon begin to cry out about water. Many things that had to be densely shaded, and even covered up with litter last season, have done better than we could have expected. Such seasons as the last, and as this at present seems to prognosticate, whilst in no way rendering it less desirable to drain gardens and fields, show also the importance of retaining a good portion of that water in pool, pond, or reservoir, before the excess finds its way to ditch or rivulet.

KITCHEN GARDEN.

Ran the hoe through all growing crops, as Cabbages, Cauliflowers, Onions, Carrots, Asparagus, Sea-kale, &c. Onions and Carrots were rolled with a light wooden roller a week ago. A firm surface makes them tuber and bulb better. Then in a week the spaces between the rows should be run over with the Dutch hoe, which will not only leave a rough surface, but kill every invisible weed. We like to defer this surface-scratching until the ground is pretty well heated, for reasons several times given. We wish our young friends to bear in mind, that as respects freedom from weeds one scuffle with the Dutch hoe will do more good in such weather as we have had lately, in one hour, than hand-weeding could accomplish in a day or two. In fact, much hand-weeding speaks of one of two things, either great deficiency of labour power, or great want of systematic management.

Sowed Radishes, Turnips, and Spinach. Will transplant some winter Onions presently, we find they do best transplanted, merely fastening the roots, not any of the neck in the ground. Sowed a part of the Beet and Salsafy, and will net-cover the former, as last season the birds did not leave a seedling after the red leaves showed above ground. The transplanted crop did beautifully, perhaps all the better that the roots were not very large. We hope that by netting we may dispense with the trouble of transplanting. Why is it that Salsafy and Scorzonera are not more generally served up at table? Good roots are tender and delicious when well boiled. A few of these Beets and Salsafy will most likely run to seed, and, therefore, another sowing should be made about the middle of May. The best way to secure fine roots is to trench deeply, and to have the richest soil at

the bottom, and the poorest at the top. Have it all rich or the richest at the top, and the roots most likely will come like fingers and toes, instead of in one straight root.

Divided and planted Rhubarb and Sea-kale that had been forced. Watered *Cauliflowers* under glasses, earthed them up by cutting a trench between the rows of glasses, and then, leaving the plants in a basin as it were, the glasses were set on the top of the ridge to give protection at night until they must be removed to give the plants full room. We find ours will come in as soon as we want them. The finest Broccoli, however, is deficient in delicacy after a nice little firm Cauliflower. Watered the first transplanted with manure water; removed the laurel twigs set among them, and slightly forked up the ground, as it is now hot enough to cause them to grow with great luxuriance, and we want to keep moisture in until we see how we shall be supplied from the heavens. The leafy twigs were just suited for placing near the plants of a fresh-planted succession, doing them more good by the shade than lots of cold waterings. Pricked-out younger plants for planting out three weeks or a fortnight hence. In ordinary seasons the Cauliflower is all the better of a little shade from May to September, and therefore it is a good plan to have Peas, say 10 feet apart, and three or four rows of Broccoli between. Watered with house sewage what Cabbages we could, and their appearance next morning showed how much they liked it. Scattered a little wood ashes and soot over the seedlings of the Winter Greens, Broccoli, &c., merely as a precaution, as few slugs or snails can be seen as yet. The only signs of a trail we have yet found were on a Mushroom-bed, where a few holes had been made in some buttons. Celery.—We notice by the market report that Celery makes a good price. We had grown several kinds of Red, but none stood the winter with us equal to the little Incomparable White. We have scarcely lost a head of it, and we are told that not one was run. We took it up some time ago to make way for Onions, and set it with fair balls and a little water to the roots in a heap of ashes, sifted from the furnaces, in a shady place; and though the heads are now smaller when dressed for the table, they are very sweet and nice, and showing as yet no signs of bolting. For general work see last week.

FRUIT GARDEN.

Ran the hoe through *Strawberry* quarters, so as to kill all weeds, seen and unseen. Did the same among Gooseberries, Currants, Raspberries, &c. The Strawberries are beginning to show their flower-trusses, and notwithstanding the dryness of the past season, we think there will be plenty of bloom, so far as we have examined. We have a lot of forced ones done bearing, which we shall plant out as soon as we can get at them. We shall also take up and pot a lot of last autumn's young plants pricked out in a border, so as to keep us going before there is plenty in the open air. Of course, we shall select those plants only that are showing bloom. Of these we shall most likely put two or three plants in a seven or eight-inch pot, and plunge these pots in a bed of leaves, with a little bottom heat, and perhaps stick a few branches of trees among them to break the force of the sun's rays. This outside hotbed, uncovered with glass, will soon cause the pots to be crammed with roots, even before the plants come into bloom, and then the pots may be set in any suitable place. This is a plan we used to adopt rather largely at one time for plants to use after April. For early forcing the plants must be prepared in the previous season. This season our first crop had more blind ones than usual, afterwards they have been very good. As a whole, we prefer the runners of one season for fruiting the next, but last season owing to the dryness we could not get runners forward enough, and we used a number of plants that had been taken up as little extra runners in September, pricked out in a border, and taken up and potted in the following July, and these have produced abundance of good fruit. With such plants, and even older ones, our previous experience would have led us to expect an abundant crop; but from the younger ones we generally obtained the finer fruit. The difficulty now is to obtain suitable places for them (see last week), which causes us just now to make our Peach-house a Strawberry-house. We hope to have the most of the pots out before the Peaches want all the sun for colouring and flavour, and the ripening of the wood. The

orchard-house makes also a good fill-gap before the plants come in with their ripe fruit out of doors. We have covered rows and beds out of doors with glass, but with little benefit, unless the weather was very sunny.

Some of our lads are rather hurt about Mr. Rivers, speaking of our being so troubled with insects, and, therefore, without boasting, we may state, that among the many hundreds of Strawberry plants in all stages, and in almost every conceivable place, not an insect of any kind has as yet appeared.

ORNAMENTAL DEPARTMENT.

Here we are pretty well overwhelmed with work. Various reasons, and especially the weather of the last winter and spring, have tended to throw us behind, and it is more perceptible in this magnificent weather. It is a great satisfaction that every man and boy, not only sees that we are a little behind, but is anxious to do the very utmost to break the back of the labour. Work and plenty of it is a most desirable thing, when you feel you can master it, and it shall not, for long at least, master you. Nothing can be more depressing in a garden than finding that do what you will you cannot get up with the work, but that day after day work wants doing, which you cannot execute without letting something of more importance suffer. Even this fine weather has brought its access of labour in watering alone, and especially in such cases where most of the water must be carried in pails or water-barrow. A great amount of bedding-out also increases labour vastly at this season. We have no doubt that we shall be all right by-and-by, but we could not expect the same hearty assistance and co-operation now, if the workmen had been kept out attempting to work in all disagreeable unhealthy weather. There is no mechanism like feet, and especially hands, when directed by thinking willing minds. Some people expect no end of results from human exertion; treating him merely as a machine, they do not give to man the tithe of the attention they bestow upon irrational or inanimate mechanism. We have had thanks innumerable from employers and employed, on what they are pleased to term out-spoken remarks on the labour question, and this encourages us to say a word on gardens, where the labour-power is always behind, creating a feeling of lassitude and despair, instead of anxious determination and resolved not-to-be-baffled industry. One of two modes should at once be adopted—increase of labour power, or decrease of ground in keeping. Many a large garden would be more satisfactory to all concerned, if the half of it were laid down in grass, or in other field crops for a time. One acre properly cultivated and all kept nice will be more satisfactory than two or three acres, that only remind one of the garden of the sluggard overrun with weeds. One acre of lawn properly kept will yield more satisfaction than half a dozen acres, where there is only the pretence of keeping; and a dozen or a score of flower-beds nicely done, will be more pleasing to all concerned than a hundred, or hundreds, in a neglected state.

Proceeded with rolling the lawn before and after mowing; edging sides of walks with the iron, so that they can afterwards be easily clipped during the season. Edged also the sides of borders before digging, and arranging and making up edgings of flowers, and also preparatory to sowing dwarf edgings and other annuals. We seldom sow Mignonette out of doors until May, as then we obtain dense masses, whilst by early sowing we generally get straggling plants. The moving and reducing herbaceous plants, and getting all borders fit for summer residents, are now a main feature of the work, and very suitable the weather is for it, only we wish that the work had been done three weeks ago. We have as yet given no heat to our late vinery, except what the sun gave, with air night and day, but the Vines are becoming so forward that we must now keep them on. We have, therefore, cleared the house of bedding plants; some were set under hurdles thinly spread over with spruce branches, and a great lot of Geraniums, some five or six in a four-inch pot, were placed in a corner to be moved to the Celery trenches. As these were not ready, a little straw was thinly placed over them to afford shade from the sun, and protection from the cold at night. Meanwhile the trenches are being made ready from clearing off last season's Cabbages, digging out trenches 5 feet wide, and 4 feet in the ridges between. Leaf-mould and sandy soil are thrown

into the trench, and these pots of plants will be turned out, when, with little attention, they will grow fast until we want them in some three weeks or a month hence. Proceeded with pricking off lots of other things, and put in our last batch of Verbenas, and the pretty dwarf Ageratum, making a bed for them, and pricking them out on the bed some 2½ inches apart, whence they will lift in nice little balls. Those put in a fortnight ago are rooting nicely. Few of our cuttings have had shading this season, but lately the sun has been so powerful that for these later cuttings whitewash is at once drawn down the outside of the glass, and some twice or thrice a-day the little things receive a dawning from the syringe, the great matter being never to allow the cutting to exhaust its juices by any approach to flagging.

What we have said of the late vinery, forces us also to get the Pelargoniums out, or the increased closeness, and the greater heat will be almost sure to bring green fly to nibble at them. We have, therefore been forced to re-arrange the conservatory, taking Daphnes, Camellias, &c., into the vinery, removing the most forward Cytisuses to a sheltered place out of doors, taking out also the most forward Cinerarias now left to an out-door corner, where they may do for cut flowers, and replacing them with different kinds of Pelargoniums. As far as watering would permit, went on potting bedding plants, greenhouse and stove plants, regulating and thinning out climbers, giving a good moist heat in a pit to Caladiums, and setting basket plants, as Stanhopeas, Stag-head Ferns, &c., in tubs of manure water, so as thoroughly to moisten them. In such weather kept the floors of all plant-houses moist, that the air might be both cooled and moistened, &c.—R. F.

COVENT GARDEN MARKET.—APRIL 29.

Within the last few days the aspect of the market has undergone a great change—from scarcity to plenty. Of Cabbages, Coleworts, and Broccoli there is now an abundant supply; and of Lettuces, both Cabbage and Cos, large quantities are brought, but no more than sufficient to meet the great demand for salading, which the heat of the weather has created. Importations of French Lettuce and other salads have been in a great measure discontinued, owing to the heated condition in which they arrive. Asparagus, Sea-kale, and Rhubarb are plentiful, and so, too, are Cucumbers. Of Grapes and Pines there is now a better supply, the former including very fine new Hamburgs from Jersey. Strawberries are quite equal to the demand. A few dessert Apples are still to be had in condition—as Braddick's Nunparail, Court-pendu-Plat, and Newtown Pippin.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	2	0	to 4	0			
Apricots	dox.		0	0		0	0		
Cherries	lb.		0	0		0	0		
Chestnuts	bush.		14	0		20	0		
Filberts	100 lbs.		40	0		0	0		
Cobs	do.		50	0		60	0		
Gooseberries ...	½	sieve	0	0		0	0		
Grapes	lb.		10	0		20	0		
Lemons	100		5	0		10	0		
Melons	each		0	0		0	0		
Mulberries	punnet		0	0		to 0	0		
Nectarines	dox.		0	0		0	0		
Oranges	100		6	0		14	0		
Peaches	dox.		0	0		0	0		
Pears (kitchan)...	bush.		8	0		12	0		
dessert	dox.		3	0		10	0		
Pine Apples	lb.		8	0		12	0		
Plums	½	sieve	0	0		0	0		
Strawberries ...	dox.		0	6		1	6		
Walnuts	bush.		14	0		20	0		

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes	each		0	4	to 0	6			
Asparagus	bundle		2	0		6	0		
Beans Broad.....	½	sieve	0	0		0	0		
Kidney.....	100		1	6		2	0		
Beet, Red.....	dox.		3	0		4	0		
Broccoli	bundle		1	0		2	0		
Brussels Sprouts	½	sieve	0	0		0	0		
Cabbage	dox.		1	6		2	0		
Capiscums	100		0	0		0	0		
Carrots	bunch		0	7		0	10		
Cauliflower	dox.		2	0		6	0		
Celery	bundle		2	0		3	0		
Cucumbers	each		0	6		1	6		
Endive	score		2	6		3	0		
Fennel	bunch		0	3		0	0		
Garlic and Shallots,	lb.		0	8		0	0		
Herbs	bunch		0	3		0	0		
Horseradish ...	bundle		2	6		4	0		
Leeks.....	bunch		0	3		to 0	6		
Lettuce.....	per score		1	6		2	6		
Mushrooms	pottle		1	0		2	0		
Mixed & Cress, punnet			0	2		0	6		
Onions	bushel		5	0		7	6		
plekling	quart		0	6		0	6		
Parley	½	sieve	1	0		1	6		
Parsnips	dox.		0	9		1	6		
Peas	quart		10	0		0	0		
Potatoes	bushel		2	6		4	0		
Radishes	bunches		1	0		2	0		
Rhubarb	bundle		0	3		0	6		
Savoy	dox.		2	0		3	0		
Sea-kale	basket		1	0		2	0		
Spinach	bushel		1	0		2	0		
Tomatoes.....	½	sieve	0	0		0	0		
Turnips	bunch		0	3		0	6		
Vegetable Marrows	dox.		0	0		0	0		

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

GLASS AND VINES FOR GREENHOUSE (M. D.).—All things considered, 31 oz. sheet glass of good quality is the best for glazing houses for fruit culture. Hartley's rough plate is also good, but better for plants than fruit trees. You will need no shade for Vines. They cannot have too much light, whilst they afford an agreeable shade to such plants as require it. The Black Hamburgh, Trentham Black, Buckland Sweetwater, Royal Muscadine, Foster's White Seedling, and White Frontignan, do well in a cool house.

DRAINING FERN CASE (Idem).—We cannot see in what way you can improve your drainage, except that the cocoa fibre should be placed to the depth of an inch on the perforated zinc instead of under it, and on this the compost, which, instead of being of leaf mould and cocoa-nut fibre, should have loam substituted for the leaf mould, and silver sand would be better than dirty sand from the Trent. Two-thirds cocoa dust and one-third yellow or hazel loam, with a free admixture of silver sand, would be a good compost, and this well mixed and placed on an inch of cocoa fibre over the drainage ought to grow Ferns well. You write of cocoa fibre which is like so much hair, and of no use except for drainage. The right stuff is like sawdust, only it is of a reddish deep brown approaching black when old.

MANAGING COCKSCOMBS (F. A. H.).—Pot them at once singly in small pots, using a compost of turfy loam, and grow on in a moist heat. Keep them near the glass, and give a fair amount of ventilation to prevent their becoming drawn. Shift them into pots a size larger when the pots become filled with roots, and give the final shift when the crown shows, using, as before, a compost of turfy loam, with the addition of one-fourth well-rotted hotbed manure, or half well-rotted cowdung two years old. Keep them near the glass in a moist atmosphere, and a temperature of from 60° to 65° at night, and a day temperature of from 70° to 85°. A Cucumber or Melon frame is a good place for bringing on the plants, and a vinery or other house will do after the plants have received their last shift. They require to be kept well watered, using liquid manure twice a-week in order to produce large combs. Keep them near the glass.

PROPAGATING PORCUPINE HOLLY (Idem).—Graft it on stocks of the common Holly, now being a good time. Tongue or whip grafting is the best. It is difficult to strike from cuttings, and seeds are not easily procured, otherwise the latter is the readiest mode. Graft quite close to the soil, and on three or four-year-old stocks.

SOWING ZINNIA ELEGANS (Florum amator).—Sow forthwith in pans, draining well, and using a compost of turfy loam and leaf mould, in equal parts. Sow thinly, and cover lightly with fine soil. Place in a gentle heat, and keep the seedlings near the glass. Keep the soil moist, and give air to prevent the plants drawing. When up and the rough leaves appear, prick off into pans or boxes an inch or two apart, and place in a mild heat for a few days, then remove to a cold frame and harden off. Plant out 9 inches apart in an open situation in a bed of rich soil, watering during dry weather every other day with liquid manure up to the time the plants come into bloom. An inch of well-rotted manure placed on the surface between the plants will assist them in dry weather. Any flowers intended for exhibiting should be protected from rain and sun by a paper shade.

APPLYING LIQUID MANURE (An Irish Lady).—You may apply once or twice a-week the liquid from the range of offices, diluted with six times its bulk of rain water, to Roses, and all flowering and fruit trees, flowers, and vegetables, from now up to the time of their flowering, or till the fruit is fully swelled. If much diluted with water already it may not be necessary to further dilute the liquid, but take care not to apply it in too powerful doses. It is better not to pour liquid manure near the stem, for there are seldom any active roots there, but by making a trench as you propose, a short distance from the stem, the manure water is likely to be given in the right place. Once a-week is not too often to apply it, and it may be given in dry weather more freely than during moist, that being the time when watering is most required. It is much too strong when it leaves a sediment to cake on the ground, and such powerful doses are more injurious than beneficial, unless indeed the sediment remains after diluting the liquid with six times its volume of water. Stir it up, never mind its being muddy looking. If it is not too strong you will gain nothing by keeping each separate.

LEAVES OF THE MALE AUCUBA (Lizzie).—For the most part the leaves are variegated, but we have seen some specimens with the leaves nearly entirely green.

SOIL FOR CARROTS IN A FRAME (B. W. C.).—Any common light loam, such as is the usual soil of a fertile garden.

UMBRELLA TENTS (T. C. M. R.).—We have no doubt that Messrs. Edgington could supply umbrella tents like those exhibited at the June Show at the Horticultural Gardens, South Kensington, last season.

PINE-STOVES (D. P. H. T.).—Making, as you propose, that part of the bed lowest which is farthest from the pathway would be very inconvenient indeed.

PEA LEAVES INJURED (South Notts).—The scollops eaten out of the edges of your Pea and Bean plants are the work of the striped Pea weevil (*Curculio lineatus*). In Scotland it is called the "Cuddy," because of its grey or donkey-like colour. Dusting the plants with soot whilst the dew is on them might check these marauders.

FLOWER-BEDS, PLANTING (Dorset).—In your arrangement of a square into sixteen beds we would keep to the same cross-planting as that with which you have commenced—thus carry out the principle embodied in 1, 1, 2, 2, 3, 3, and 4. To do this you must cross: you must cross 6, 7, and 5, 8, repeated. Your proposed plan, though no doubt it would please many, is just having a scarlet wheel on one side, and a purple wheel on the other side of your carriage; or having that carriage drawn by a black and a white herself instead of by a matched pair. It is for you to determine which you like the most.

FUNGUS IN FERN SOIL (Beattie).—Your Ferns will never thrive so long as they remain plunged in the leaf mould full of sticks. Remove them at once, and never use mould containing wood for the growth of Ferns. The decomposition of the leaf mould and rotten wood is the cause of the fungus appearing. We know from experience that Ferns grow much better without either. It is not necessary to plunge the pots in which Ferns are grown, doing so tends to sodden and sour the soil. The fungus is that usually found on decayed wood when surrounded by a moist warm atmosphere, and is very destructive to vegetable life. It is not usually found on wood exposed to the atmosphere, nor indeed does it appear anywhere in a well-ventilated structure. Fresh air is its destruction, though it is very tenacious of life where it once becomes firmly seated. Remove the leaf mould and all the wood it contains, and sprinkle fresh lime where it was. Repot the plants most affected, and frequently stir the soil in which the others are growing. Keep the pots clean, placing them on gravel about the size of a bean. It has a cleanly appearance, and assists in keeping the atmosphere pure, besides preventing the drainage choking. Admit fresh air daily, always avoiding draughts. Many people stew their Ferns—giving them a great heat and an excess of moisture, with very little ventilation. Very few Ferns require a temperature of from 70° to 85° in early spring. *Pteris argyræa* with us attains a very large size in a vinery from which frost is just excluded in winter. It will do in a greenhouse, but better in a house where the temperature is from 45° to 50° in winter, and in summer from 60° to 80°. It is not a stove Fern, though it will live there and make fronds 6 to 8 feet long. As you use cocoa dust we may put you on your guard against keeping it dry under cover, in the potting-shed, or elsewhere to become dry. When this is the case it becomes infested with dry rot and other fungi, and when it is used for potting, a plentiful crop of fungi, more or less inimical to the plants, is the result. It should be laid in a heap in an open situation out of doors, mixed with one-third loam, and turned over twice in twelve months. It is better when it is old, or black, and will then grow almost any kind of plant. Your refuse we see is fresh very slightly decomposed. Use it old.

TIFFANY-HOUSES (Yorkshire).—Calico-covered houses, or pits covered with the same, are better than tiffany-covered, and very useful in summer for plants needing a little protection; and in one sense they are better than glass, as admitting enough of light, and yet giving sufficient shade. We have no faith in such covering keeping out 14° of frost, and for nothing besides the above do we consider them comparable to glass-houses. Few tiffany-houses will resist a storm unless extra well secured. For summer purposes they are useful.

GREENHOUSE ARRANGEMENTS (Inexperienced Amateur).—We would, under such circumstances, prefer a border inside, and planting inside; but if the border must alone be outside, then there need be no difficulty with a border 7 feet wide at one end, curving to 3 feet wide at the other, as at the narrowest you need not plant within 6 or 8 feet at that end. We have had heavy crops for about ten years in a small pit, and the earth space is only 24 feet, by 15 inches in depth. Your border will do very well for a 12-feet-wide house. If there is good soil there now, a little fresh might make all right. If, however, you can, as you say, obtain plenty of fresh loam, then it certainly would be better to use it, and concrete to prevent the roots going down. The concrete should slope from back to front at least 12 inches in the 7 feet, and there should be a good drain lower than the concrete. The concrete is best formed by using the sharp sand and red gravel, five barrowloads to a barrowload of quicklime, made up quickly as you go along, with just enough of water to mix, and spread out at once 3 inches thick, levelling the top as you go along with the back of the spade. When somewhat set, sprinkle a little dry sand over the surface, roll the whole well, and let it become dry before you put earth upon it. It will then set very hard. The soil will be the better the nearer the surface it is taken, and may be placed in the border at once, or in heaps, to ferment and sweeten previously. We would make the border from 20 to 26 inches in depth, and in that we would incorporate from twenty to thirty bushels of broken bones, and two or three loads of horse droppings that had been previously heated, and, if possible, some half a dozen loads of lime rubbish. We would add no other manure. Every summer you might give the border from a quarter to a half cwt. of guano, if given at four or five times, and washed in. About 2 inches of horse-dung would be safer, raking off the decayed portion when the strength was exhausted. We have no doubt that Lady Downes' Grape, so treated, will bear every year; but early in autumn the border should be covered with dry litter; and if rain and snow are kept out by shutters or tarpauling so much the better. We have so often entered on the subject of the strength of liquid manure, that we would only be giving wearisome repetition by detailing what we meant by weak manure, &c. In many kinds, as house-sewage, drainage from the farmyard, &c., practice must alone determine. It is safest to err on the side of weakness. Thus, we have had drainings from the farmyard, after rain, that we have used freely without the further addition of water. In dry weather we have diluted with from three to five times its bulk with clear water. For good guano we consider 1 oz. strong enough for two gallons; of superphosphate of lime 2 ozs. may be used. For a thirty-six-gallon barrel of water, a peck of soot and a quart of lime will give a strongish clear liquid. For the next filling we would use half the quantity. This will do for such things as Strawberries, Kidney Beans, fruit trees in pots, &c.; but for many pot-plants it would be too strong, and, when used clear for syringing trees and plants, we would dilute more than half. A bushel of horse-droppings, or those of sheep or deer, would, after a week's fermentation, do for sixty gallons of water. We generally make our liquid manure strong, and dilute as we use it. We like all liquid manure to be clear.

WATERING HARDY FERNS (E. M.).—It is not only desirable but necessary to water out-door Ferns during dry weather after growth commences. To grow them well the soil should never be allowed to become dry; sprinkling overhead is very beneficial. Rain water is the best, but hard pump water will do if exposed to the air in a tub for a few days prior to using it. By having a tub in the most convenient place, and refilling it after watering, you will always have water ready for use when required. Soapy water will not do, though a weak solution might not cause immediate mischief, yet it is better not to use it, otherwise the more delicate kinds will suffer in consequence.

INSECTS (J. B. Gilbert).—The insects are the immature states of one of the Frog-hoppers or "Cuckoo-spit" insects, the white frothy secretion of which must have been visible on the plants, and, if so, the insects might easily have been destroyed by hand. If there were no such "cuckoo-spit," these larvae might have been killed by ordinary fumigation.—W.

GROUND TEMPERATURE (Fruit-eater).—The observations of the ground thermometers at 1 and 2 feet deep are read between 8 and 9 A.M. of the same day as that for which the temperature is recorded. The variation of the temperature of the earth at these depths is so slight as to render maxima and minima observations of ground temperature on each separate day of but little practical importance.

VINES IN POTS NOT FRUITING (A. F. N.).—Providing they are in 12 or 13-inch pots they will not require anything that way if fresh potted in autumn or prior to starting. If, as yet, in pots of less size, shift them into their fruiting-pots by June, affording good drainage, and using a compost of rich turfy loam chopped, but not sifted. Disbud to one strong shoot as near the base as possible, and cut the upper part away. Train the shoot left at from 1 foot to 16 inches from the glass, and do not rub off the laterals but stop them at the first leaf, and stop them again at every fresh leaf. When the cane has grown to the length of 9 feet stop it, and stop the laterals which will, after this, be plentifully emitted at every leaf. Keep well watered, employing weak liquid manure at every alternate watering; the foliage will be benefited by syringing in the evening. Maintain a moist growing heat within the house. When growth ceases gradually lessen the supply of water and remove the laterals, except a few at the top, cutting them off quite close. When the wood becomes quite brown and hard, and the leaves begin to fall, withhold water, and prune to the length required (5 feet or more) when the leaves fall, and keep in a cool house until wanted for forcing.

MANURE FOR RHODODENDRONS (J. Edwards).—Old cowdung, or very decayed hotbed dung, is an excellent application to Rhododendrons, 2 inches deep at a time as a surface-dressing. Your specimens were all dried up. They should be sent in a box covered with a little damp moss.

BOTANICAL QUERIES (R. C. K.).—The weed is the common Shepherd's Purse, *Capsella bursa-pastoris*—*Thlaspi bursa-pastoris* of Linnaeus. We have no copy of Chid's book. He, perhaps, speaks of *Medicago lupulina* under its English name of Black Medick or Nonesuch. The dotted circle means "Annual," the circle and arrow "Biennial," the 4-like figure "Perennial herbaceous," and the h-like figure "Tree or Shrub."

CACTUS SEEDLING (W. M. Penn).—Like others, the flower is richly coloured, but is not so fine or so brilliant as many others exhibited.

CAMELLIA (B. Hewlett).—It is one of the very old varieties, and of too usual a colour for us to determine the name from a single and fading flower.

CATERPILLARS ON PLUM TREES (A Constant Reader).—They are the caterpillars of the Winter Moth, *Geometra brumata*. As they are on trees in your orchard-house you might easily hand-pick them, spreading a sheet round the tree to catch those which let themselves down. Dust the leaves with fresh white Hellebore powder.

ROSE TREES PRODUCING STUNTED SHOOTS (Agnes).—We do not recollect a Rose assuming the character yours has, but we have seen trees of other kinds do so; and the remedy in that case was to rub off a great many of the small shoots, and those left attained the proper dimensions. This plan we would recommend you to adopt, rubbing off one-half of the shoots at once, and a few days afterwards some more; and if you applied some liquid manure to the plant, most likely it would grow on vigorously; but if there were no shoots produced last year but short ones, it is not likely that any flower will be produced until the plant assumes a more healthy habit.

NAMES OF PLANTS (W. O.).—1, *Cilanthus puniceus*; 8, *Habrothamnus fasciculatus*. The other six, single flowers of Asclepias, no one could name, the varieties are so numerous. (M. B.).—*Sutherlandia frutescens*. (Jane).—We are unable to give you the information you require about the *Cotoneaster*, but will make further inquiries. (A nearly M. D.).—1, *Adiantum pubescens*; 2, *A. cuneatum*; 3, imperfect; 4, *Pteris hastata macrophylla*; 5, *Nephrolepis exaltata*; 6, *Asplenium viviparum*; 7, *A. fasciculatum* var.; 8, *A. fragrans*; 9, *Pteris longifolia*; 10, *Nephrolepis pectinata*; 11, *Oncidium lucidum*; 12, *Asplenium marinum*; 13, *Adiantum capillus-Veneris*; 14, *Selaginella*; 15, *Thunbergia Hawtayneana*. (E. L.).—1, *Pleopeltis pustulata*; 2, *Oncidium lucidum*; 3, *Polystichum capense*; 4, *Platyoma rotundifolium*; 5, *Asplenium lucidum*; 6, *Goniophlebium nerifolium*; 9, *Cyrtomium anomophyllum*; 10, *Cheilanthes hirta*; 11, *Asplenium bulbiferum*; 12, *Trichomanes speciosum*. (Delia).—1, *Asplenium Adiantum-nigrum*; 2, apparently abnormal *Lastrea patens*; 3, immature.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending April 29th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun. 23	30.173	30.107	78	30	54	51½	N.E.	.00	Very fine; very dry air; exceedingly fine; cool at night.
Mon. 24	30.235	30.182	74	31	55	59	N.E.	.00	Very fine, with heavy dew; cloudless and very fine.
Tues. 25	30.205	30.117	71	30	54½	52	N.W.	.00	Slight haze; clear; hot sun; very fine. [dew at night.]
Wed. 26	30.116	30.096	80	35	55½	52	N.W.	.00	Very fine; hot, and dry air; very fine throughout; heavy
Thurs. 27	30.096	29.981	82	42	55	52½	W.	.00	Very fine; unusually hot for the season; dry; fine at night.
Fri. 28	30.004	29.917	77	37	55	53	W.	.00	Uniform haze; very dry, with slight haze; overcast at night.
Sat. 29	30.036	29.973	55	33	55	53	E.	.00	Dusky and white clouds; cold dry easterly wind; fine; [slight frost at night.]
Mean	30.123	30.053	73.85	33.71	54.85	53.14	.....	.00	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

PIGEONS AND ROOKS.

I do not think that "CHANTICLEER" is right when he blames the rooks for causing his Pigeons to desert their house. I doubt whether he is putting the saddle on the right horse. I will give my experience on the point. I have occupied the same residence for upwards of nine years, there are very large rookeries close to me, one a very few hundred yards from my Pigeon-loft, and I have never lost a single Pigeon. The two birds are in no way antagonistic as far as I can discover. Were I "CHANTICLEER" I should look to some other cause than the rooks for the departure or destruction of my birds. I have kept fancy Pigeons for upwards of a quarter of a century, but never lost a bird. My plan here is this: I devote the room over the coach-house for their loft, it is rather small, and in summer very hot, being ceiled, and having but one small window, which is wired—still the birds have always done well. At the present time, for here it is extremely warm, instead of closing the trap-door, by which I enter from a ladder, I have a moveable door of wire-netting. This ventilates the loft fairly, causing a current of air to pass upward and through the window. At night I close the trap, which is at the gable, near the top of the roof, and, keeping no cat, am annoyed by none. Wherever I have lived I have either taken with me or procured Pigeons, and when I came here I brought my stock from my former home, only a mile as the crow flies, and though they were high-flying Tumblers not one left me. At first, when stocking a loft, I fasten a good-sized wire cage on the landing board, here the Pigeons sun themselves, and gain a knowledge of the scenery near their new home. In three weeks I let them out—all the better

if they have laid. I let them out fasting; usually they are awkward in finding their way in for the first time. Their mistakes in getting up are quite amusing, aiming either too high or too low, but as I always feed inside the loft hunger sharpens their ingenuity. Once back again, I have no further fear about them, and how they coo and testify their delight at getting in again!

As to the almost constant occurrence of bringing new birds home to the others, I always draw the flight feathers of one wing, and enclose them for the night by a wire cage near one nest, this becomes their castle. Next day they have a bath, greatly do they enjoy it if they come from a bird shop, this cleanses and settles them, and greatly comforts the poor wing. Then I have, for the sake of the new comers chiefly, a number of various-sized flower-pots inserted on the floor, placed here and there, upon these they spring ever with but one wing (the first large feather, mind, I never draw, that left shields the new feathers), and they hop from one pot to another, and preen and enjoy themselves. Then in a fortnight they get up to the inside of the entrance, then outside and peep about and learn their whereabouts, until at length they take little flights, and at last, in a month or two, join in the great flight, and naturally come home with the rest.

Pursuing these two plans I have never lost one bird. If "CHANTICLEER" has only provided a box on a pole, however well-planned or pretty, I do not wonder at his birds leaving it. A wooden erection is no home for Pigeons, it is merely "out-of-doors under a chip." The wind whistles through it, the sun warps it, the snow penetrates it and lies on the ledges (and all birds abhor snow), a driving shower wets the eggs of the young, cats come and mew on the ground below, turning up longing green eyes; on one side it burns, on the other it freezes. I do not know whether it is worse in summer or in winter—in the dog-days or

on frosty nights. Verily it is no home, and on the first opportunity the Pigeons rightly decline it, with thanks. I never knew any live for any length of time in one, except Fantails, who looked miserable enough, but being the worst of fliers and, perhaps, the meekest of Pigeons, preferred to put up with present ills rather than fly, or try to fly, to others which might be worse.

If "CHANTICLEER" has no loft or room to afford for his pets, I would recommend him to build a projecting loft from the gable of an outhouse, of stout planks for the floor, and bricks for the sides, and roofed with tiles or slate, with a flat board on the top of the roof, and an open hurdle fastened on the south or sunny side for the birds to rest on. The place should be 6 feet by 4 at the least. By the way, instead of blaming the black rooks, are not the blackguards to be blamed?—in other words, were not the Pigeons stolen? though I incline to the idea if their cot were a wooden construction on a pole, that they left not finding their home comfortable.

Now that I am writing about Pigeons, let me, for the credit of poor maligned human nature, narrate a pleasing circumstance which happened to me only last week. Six years ago, and several before that date, I was accustomed to deal at a certain bird shop. Pigeon books of a former day used to end in some such way as this: "It would be absolutely impossible to enumerate the tricks that are played off to deceive the unwary by Pigeon-dealers. There is not one-tenth part so much jockeyship among horse-dealers as Pigeon-sellers"—in short, Pigeon-dealer and rogue were supposed to be synonymous. But oh! never condemn a whole class, it is harsh, it is wrong. But to return to my tale. Last Friday I called at the old shop in search of some high-flying Tumblers, I am getting up a flight, I found a son and daughter of the late proprietor now, and for long, installed in the old man's place. I chose a pair of birds. I noticed the owners whispering, when the brother came up to me, and touching his hat, said, "I did not know you at first, sir, but my sister says you are the gentleman that once did poor father a kindness, and we therefore beg you to accept the birds." I had forgotten the subject to which they referred, as indeed, it was but a very small matter. I accepted the Pigeons, for I am sure it would have hurt their feelings if I had not, and, of course, I purchased another pair.—WILTSHIRE RECTOR.

EARTHENWARE PANS FOR NESTS.

PERMIT me to state in your Journal my experience of the use of earthenware shallow pans for laying and sitting, as recommended by Mr. Geyelin.

1st. My hens will not lay in them, but, having removed every other kind of nest, prefer the hard concrete floor, although I have varied the pans by putting in sand, turf, cocoa-nut fibre refuse, &c.

2nd. I have sat five hens in them, and in each case the eggs have been reduced to from six to eight by the hens turning the others out, owing to the turf placed on sand being nearly level with the edges of the pan. My hens (Cochins), therefore, will not take to them at all.

I may add that I have been singularly unfortunate in not having hatched a single chicken; and, in fact, out of three sittings I only found life in one egg, and that two days overdue, which I sacrificed rather than waste the time of the hen in rearing.—PÆCY CROSS.

STOCKING A DOVECOT.

IN reply to Alan Walter, as to how he is to stock his large dovecot, he has only to procure some pairs of Pigeons, confine them there for a fortnight or three weeks, but so that they can see out of the opening, or openings, which is to be their future entrance. It is only necessary to see that the Pigeons are an equal number of cocks and hens. Pairing and multiplying will then proceed without further trouble. Feed them well, and give them plenty of clean water; also, broken mortar from an old wall, and sufficient straw for building their nests, out up into short lengths of 5 or 6 inches. Before stocking the cot it will be advisable to have it thoroughly cleaned and repaired, all the rat and mouse-

holes securely stopped, all nests well cleaned and repaired, and the whole lime-washed, mixing some flowers of sulphur in the wash. As to what sort to breed that must depend on fancy or inclination, almost any kind will do except the more tender and high-bred fancy breeds.

Blue Rocks. These would be most in keeping with the old monastic dovecot, but they are difficult to procure, troublesome to establish, and not very fast breeders.

Then come the Chequered Dove-house Pigeons of a dark slate colour (often, though improperly, called Blue Rocks). These are more prolific. Or he may choose to have all quite white. They look very pretty, though of a common kind, are equally hardy and good breeders. But if he is quite careless of appearances, then mixed breeds, or mongrels will soon people the house and fill pies. I do not, however, advise any of the before-mentioned. If the nest places are large enough, I would stock it with the largest Bunts I could get. Failing these, I would have something to look at as well as eat—all Antwerp Carriers, or Dragons, or else one variety of Toys, of which there are so many to choose from. Buy a few pairs of the approved variety and let them breed until they had stocked the cot, only killing any that were badly marked and odd cocks. In this case all stray Pigeons must be killed whenever they join the flock. As to the Toys, to choose from there are Nuns, Spots, Archangels, Magpies, Spangles, as Suabians, Porcelains, Victorias, &c., all easily procured; and many others that are not so easily obtained would give satisfaction.—B. P. BRENT.

WHARFEDALE POULTRY SHOW.

THE sixty-eighth annual Show of the above Society took place at Otley, on Friday, the 21st of April.

The show of poultry was superior to any previous one, both as regards the quality of the specimens shown, and the number of entries.

There were also several classes for Pigeons, but the entries were not numerous, though some of the birds were very good. Subjoined is the prize list:—

SPANISH.—First and Second, H. Beldon, Gilstead, Bingley.
DORKINGS.—First, J. White, Warlaby. Second, F. R. Pease, Darlington.
GAME (Black-breasted and other Reds).—H. Snowden, Bradford, and J. Sunderland, Halifax—Equal.
GAME (Any other variety).—First, H. Snowden. Second, H. Beldon.
HAMBURGERS (Golden-spangled).—First, R. Tate, Leeds. Second, H. Beldon.
HAMBURGERS (Silver-spangled).—First and Second, H. Beldon.
HAMBURGERS (Golden-pencilled).—First, H. Beldon. Second, H. Snowden.
HAMBURGERS (Silver-pencilled).—First, D. Illingworth, Burley, Otley. Second, H. Beldon.
BANTAMS (Game).—First, R. Tate, Leeds. Second, W. Taylor, Hunslet.
BANTAMS (Any other variety).—First, H. Beldon. Second, F. R. Pease, Darlington.
ANY OTHER BREED.—First, H. Beldon. Second, R. Tate.
GAME COCK.—First, J. Sunderland. Second, T. Dyson, Halifax.
DUCKS (Houen).—First, H. Beldon. Second, J. Ward, Drighlington.
DUCKS (Aylesbury).—First, Suttle & Waddington, Otley. Second, H. Beldon.
DUCKS (Any other variety).—First, I. Todd, Clifton. Second, Suttle and Waddington.
PIGEONS.—Tumblers (Short-faced).—Prize, C. Cole, Bradford. Tumblers (Common).—Prize, R. Ramsden, Armley. Fantails.—Prize, T. Ritchie, Otley. Pouters.—Prize, E. Ripley, Hawksworth. Barbs.—Prize, C. Cole. Owls.—Prize, I. Todd. Carriers.—Prize, C. Cole. Turbits.—Prize, H. Beldon. Jacobins.—Prize, C. Cole. Any other variety.—Prize, H. Beldon.

The Judges were Wm. Smith, Esq., Halifax, and Mr. E. Hutton, Pudsey.

DOES WILD GARLIC IMPART AN ILL SMELL EITHER TO BEES OR THEIR PRODUCE?

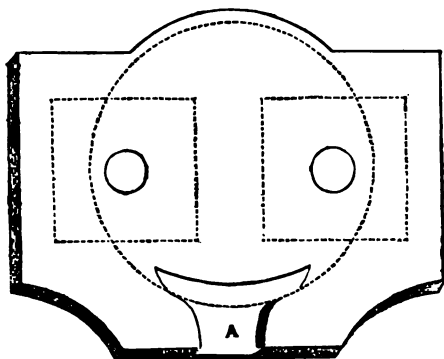
LAST year, about this time, I perceived such an offensive smell proceeding from one of my hives that I felt convinced that that much-written-about disease "foul brood" had shown itself in my apiary. Accordingly, I resolved to destroy the hive forthwith, although it was my strongest and, in every way, most thriving stock, and any others that might be similarly affected. On examination I found the same smell emanating from all my hives, and it was perceptible towards the close of the day from some distance from the apiary. This being the case it was of no use to destroy the hives, at any rate before consulting some well-experienced apiarian. I wrote to Mr. Woodbury, and also to a friend in my own neighbourhood with a request that he

would come and examine my stock. Mr. Woodbury pronounced the offensive smell to be the much-dreaded foul brood. My friend, however, on hearing that our woods abounded with wild garlic, immediately attributed it to that, of which the bees are especially fond. Mr. Woodbury, however, did not seem to think it possible when I made this suggestion to him; and as the same smell has made its appearance this year together with the wild garlic I cannot but fancy that there is some connection between the two, and wish to know the opinions of other apirians.

The hive in which I first discovered the supposed disease last year was my strongest at the time and most prosperous afterwards, it supplying me, after the stock was filled, with about 40 lbs. of pure honey. If there is any connection between the garlic and this smell, may not other apirians in neighbourhoods where garlic abounds have been often misled by the smell to think that there was foul brood, and destroyed their hives without any just cause?—A MAN OF KENT.

HIVES WITH ENTRANCES AT THE TOP.

In answer to your request to furnish you with an outline of my hive, I send a miniature sketch of the wooden top of one of my straw hives. There is no difference whatever in the make of the other part, except in size, from the ordinary straw hive with flat top. If of straw, I make the hives round, about 15 inches inside diameter (not less), by 9½ deep; if of wood, 12 inches by 12 inches square inside, and the same depth. In general, I attach a piece of comb as a guide in the centre, so that the bees may make the ends of their combs come opposite the entrance. The top is securely and permanently fixed to the hive, but the bottom board I never fasten. The latter is made with an entrance to be used if required, but which I keep closed by fitting a piece of wood into it, which is soon made fast by the bees; but if at any time I find them becoming too hot for work, I extract it, and they are soon thoroughly ventilated. Over the doorway in the top board a piece of glass is let flush into the wood, or a bit of zinc may be tacked down upon it. The dotted circle represents the interior circumference of the hive, and the squares show where the supers are placed.



A Passage sunk in the top permitting entrance into the super.

You will observe that I keep the holes in the top for placing the supers over as near the sides of the stock-hive as possible (and a little further back from the entrance than in the sketch), in order to prevent the queen ascending as in large hives, for she rarely troubles the outskirts of her kingdom or colonies with her presence if she has plenty of room in the capital. My greatest difficulty has been to prevent the storing of farina in the supers; but last season I was more fortunate than I had ever been, as I had several supers without any, and one glass with 20 lbs. of pure white honey, with only five cells containing pollen. It was a beautiful sight, but last season was the best that has been in this part for some years.

At first I placed the holes for supers in or near the centre; but whether the bees entered at top or bottom of the old hive, I always had brood in them. Since reading of hives with moveable bars for the bees to construct their combs from, I was determined to try them. Of course, I shall

make them with entrances at the top; and I cannot help sighing when I think of the many experiments I might have made and the information I might have gained had this plan come under my notice sooner. I fancy my feelings are akin to those of Gordon Cumming, Esq., when he returned from his sporting tour in Africa, where he had been obliged to use the old-fashioned rifle and ball, and found that the Minié had been invented during his absence.

It will be seen that the top is made to support two supers side by side, about 9 inches square by 7½ deep; but I am not very particular as to size or shape, as I use my judgment according to the strength of the stock and the season. The advantage of placing two supers side by side is, that it enables me to work them on the storified system, which I have found to be the best, and by so doing I avoid what your Renfrewshire correspondent seems to be so much afraid of—i. e., the bees taking fright when a full super is raised and an empty one placed under it, and employing their time in undoing their former work instead of being more profitably engaged. The supers are never both filled to the day, and consequently if I raise one there is still one left for the bees to work at.

I imagine if your Renfrewshire correspondent would not practice so much upon his stocks, but leave well alone, he would not have to begin the world so often with beat-outs, as the very greatest enemies the bees have are their own inexperienced masters (myself included); and many young apirians that I have been acquainted with have at first led me to fancy they were going to do wonders with their management, and have as often lamented the loss of all their stocks, and given up bee-keeping in despair. Upon inquiry I generally found that when the bees were busiest at work their masters were just as busy interfering with them; whilst just at the time when the bees wanted their assistance they took very little if any notice of them.

In my first letter I stated that I had kept the same stock eighteen years. I have no doubt I should have had it now had I not been obliged to remove and scatter my apiary to the four winds, and even since then I have had to dispose of all my stocks but one, after wintering them all safely, and this one I am determined, if possible, to keep under every disadvantage.

I have given the best description in my power, but as there are details which are difficult to describe in writing, I may add that I am able to supply these hives to those who may wish to try them, at 12s. 6d. each.—HENRY STATTLE, Kingsland, Shrewsbury.

AN ANCIENT BEE-BOOK.

I AM indebted to the Rev. F. de Soyres for the perusal of an old bee-book printed in 1655, entitled, "The Reformed Commonwealth of Bees, presented in severall Letters and Observations, to Sammuell Hartlibb, Esq.,"* and said to contain "Many Excellent and Choice Secrets, Experiments, and Discoveries." Among these we find Virgil's blunder repeated, and even professedly verified by,

"An Experiment on the Generation of Bees, practised by that great Husbandman of Cornwall, Old Mr. Carew, of Anthony.—Take a Calf, or rather a Sturk (or Steer), of a year old, about the latter end of Aprill, bury it eight or ten dayes, till it begin to putrefie and corrupt; then take it forth of the earth, and opening it, lay it under some hedge, or wall, where it may be most subject to the Sun, by the heat whereof it will (a great part of it) turn into Maggets, which (without any other care) will live upon the remainder of the corruption. After a while, when they begin to have wings, the whole putrefied carcase would be carried to a place prepared, where the Hives stand ready, to which, being perfumed with honey and sweet hearbs, the Maggets (after they have received their wings) will resort."

Next follows a description of a "New Bee-Hive," which is of a circular form, made of wood and to "contain a just bushell within the work." Three of these appear to constitute a set, and the first, when filled, is raised on an empty one, with a circular aperture in the top, and this in its turn

* Although apparently not very learned on the subject of bees, Mr. Hartlibb seems to have been a man of some literary eminence, and was a friend of the illustrious Milton, who dedicated a work on education to him.

is raised on a third, the top one being ultimately removed full of honey. Access is obtained to the hive through a row of fifteen holes, "three in the midst for the great Bees, and six smaller on each side for the lesser." The drones are, I suppose, meant by "the great Bees;" but the whole arrangement is worthy of that celebrated genius who, having made a hole in the barn door to admit his cat, afterwards cut a smaller one for the accommodation of her kitten!

We next have "a new kind of excellent food for Bees," which is said to be "a notable secret," had from "an old German Captain," and consists of "the planting of Anise near them." This is "proved the best means for multiplying and keeping of them, as also for their breeding of great store of honey." "The Herb being taken and the inside of the Hives rubbed therewith, causeth great multitudes of Bees to enter and become close retainers to those Hives." "That the feeding upon this plant will cause each Stock to engender and thrust out three young ones in one year, within which space they do else not use to do so above once. That against the time of their thrusting forth, other Hives ought to be placed next to those from whence they thrust forth, which, as well as also the way leading to the Orifices, are to be rubbed with the Anise in such sort, that the juyce of the Herb may come forth and stick thereunto, and the young Stocks that come forth from the old, will certainly enter into those, and not repair any where else. But in case that upon the neglect any be swarded forth and settled unto some tree, the fault may be amended by rubbing the inside of the new Hive with Anise, and holding it on the top of a long perch unto the bees, who will enter therewith of themselves as soon as they scent the sweetness of the Anise." We are informed, moreover, that "a Baron in Austria so thrived by this secret that he furnished many Countries with Honey and Wax, and thereby abundantly increaseth his wealth and revenue!"

Then we have "A Translate of a Letter written in High-Dutch," which recommends the prevention of swarming and describes a round straw hive made in sections and very nearly identical with a German "lager" hive shown in the International Exhibition of 1862. I may explain that by "High-Dutch" is meant high-Deutsch or German, so that the fashion of the hives appears to have varied but little during the last two hundred years.

"Tostes of bread sopped in strong Ale" would probably suit Dr. Cumming, and when put into a bee-hive are stated to be "very good and cheap food for bees, of which they will not leave one crum remaining." Flour or meal as a substitute for pollen would also appear to be no new idea, since we are told, that "It will be fit some time to lay some dry Meal or flower of beanes, which dry Meal is given them sometimes as Hey or Corn is to Conies, or upland pasture to Sheep in times of great rain to prevent the rott, and such diseases, as will necessarily follow from continual moist food."

We can, however, only exclaim *credat Judæus!* in respect of the following "notable and approved experiment for improving of Bees.—Take an handful of Melissa (that is a herb which we commonly call Baume). One drachm of Camphire. Half a drachm of Musk dissolved in Rose water. As much yellow Bees-wax as is sufficient. Oil of Roses as much. Stamp the Baume and Camphire very well, and put them into the Wax melted with the Oyle of Roses, scud to make it up into a masse; let it cool before you put in the Musk, for otherwise the heat will fume away most of the scent of it. Take of this masse as much as a haselnut, and cleave it within your Bee-hive. It will much increase the number of your Bees, not only by provoking them to multiplication, but also by enticing many strange Bees to come thither, and abide there. You shall also find, both in Honey and Wax, three times more profit than otherwise you should have had!"

The letters of "Mr. William Mewe, Minister at Eastlington, in Gloucestershire" are, however, remarkable as proving that gentleman to have been much in advance of his age in bee management. Not only had he "transparent Hives" whereby he could show his friends "the Queens Cells and sometimes her person, with her retinue," but he placed stocks of bees in his "bay windows," of which he declares "their company very harmonious, especially for those that lodge in their Chambers, whether they would wake or sleep,

in so much as I have heard some say (that there have lodged) they would give twenty pound to have and here the like at home."

There is also a letter "written by that much accomplish'd and very ingenious Gentleman, Fellow of All-Soules Colledge in Oxford, Mr. Christ. Wren* with the figure and description of the Transparent Bee-hive." This so-called transparent bee-hive consists of a set of three octagonal boxes placed one on the other, and is scarcely to be distinguished from the modern Stewarton hive, except in respect to the means of intercommunication between each, which consists of a central aperture instead of bars. There is a window 6 inches by 4 inches at the back of each box, and, what is not a little curious, every box is lined with "rush matt," a plan which I tried some few years ago, believing it to be quite original, and having no idea that I was merely resuscitating a contrivance more than two hundred years old.

Such is a brief transcript of those passages in this ancient bee-book which appear to me the most remarkable, and which may not be without interest to the apiarian readers of "our Journal."—A DEVONSHIRE BEE-KEEPER.

AN APIARIAN REVIVAL.

THAT the old adage, "Where there's life there's hope," may, in apiarian matters, be pushed a little further, even to the extent, that where there's no seeming life there may yet be a ray of hope, was once well illustrated by an incident in my apiary, a narration of which at this particular season may prove useful as well as interesting.

On a very cold day in the month of March, some few springs ago, towards the close of a three-weeks tuck of withering easterly wind, putting all apiarian operations out of the question, I was mounted on a pruning-ladder, giving some finishing touches to a fruit tree on the garden wall behind the hives, yet could not resist casting an approving sidelong glance at the daring little foragers, who had braved the blast, and now and again were going in with their yellow loads. The extreme quiescence of one stock arrested my attention, causing me to descend from my eminence and administer a sharp tap or two at the entrance; but, alas! no answering, sleepy buzz. The hackle was quickly removed, and then the binding cords securing it to the board, and the stock raised. Ah! how light; its inversion realised my worst fears, causing that pang of regret known only to the bee-keeper, who finds a fine, healthy, well-peopled colony dead, solely from his inadvertence in not administering, possibly, but a few ounces of sugar.

The history of the colony was this. A 3 lbs. 14 ozs. prime swarm hived on the third day of the preceding July in a Stewarton-box, subsequently eked with the intention of its being wrought on my "adapter plan," it was the most liberally fed of all my hives; but the food, as was now too apparent, had been applied at the end of the season to other purposes than winter store. The hive as well as eke were completely combed to the board, while the abundance had so stimulated the breeding of one of the most fertile queens I ever met with, as to cause an addition of late brood seldom seen; besides the little mound of dead on the board, the spaces betwixt the combs were filled to a surprising extent. These loose bees were swept off and the hive replaced. What mattered it, though the foot of my ladder should be entangled with the binding-cord and bring the hive down with a thud on its side, prostrate, on a bed of arabis—the bees were dead. It was only in consonance with its ruined condition that the east wind should for the remainder of the day whistle in its accustomed melancholy strains a requiem through the silent streets of this little city of the dead, varied only by the sharp chirping chuckle of one Titmouse after another hopping triumphantly over the combs, pausing merely to regale himself now and then on all that remained of the once active little workers.

Late in the evening passing with a mat to protect a peach from the keen frost rapidly descending, my eye rested on the fallen hive. I set it on a board and carried it in, placing it in an out-of-the-way corner of the parlour, with the intention of picking out at leisure the dead bees from the vacant cells, so as to put it away prepared for future use.

* Afterwards Sir Christopher Wren, the great architect.

Before retiring for the night and again in the morning, I took a cursory look at the formation of the combs, the silence of death reigning. During the forenoon while raising the hive with the view of commencing operations, did my eyes deceive me? Could that be a slight quiver of vitality that passed through that bee closest to the window? Again repeated, there was no mistake. I at once ran in-doors and carried the hive to snug quarters just outside the hearth-rug. Called away, on my return in half an hour how delighted was I to hear a sweet little hum speaking unmistakably of life, and with it hope. The bung was withdrawn and a soda-water bottle of food took its place; with the increasing heat and increasing vacant space above the food did the hum rise louder, and yet more loud. With what delight I watched the resuscitated separate themselves from the hopelessly defunct mass on the board, and crawl slowly up out of sight among the combs. How anxiously did I subsequently go over this mass, and how relieved was I to find no queen. I next cut off the ske with the suspended comb firmly attached to the cross stick. On the following day the east wind was gone; and the weather being now mild and genial, I set out the hive on its board, carefully wrapped up, and fed on cautiously. A few days more and I was delighted to see pollen carried in. By-and-by the box became crowded and the combed ske was restored, and ultimately my defunct hive happily became one of the best storified colonies I ever possessed.

The narration of the above old story was prompted by hearing the other day of a bee-keeper in this neighbourhood, who at the end of the season had set a fine hive, of which he was not a little proud, in the window of a spare room, there to work under his immediate observation. Chancing to look at it one day during the recent severe weather he found it, as he supposed, quite dead. He carried it into his sitting-room, and chagrined as he was, he hastily broke it up, consigning the bees and empty comb to the dunghill. Some two or three workers that had dropped on the floor during the demolition he afterwards picked up and threw upon the hearth. He was more than astonished in a short time afterwards, to hear them give unmistakeable evidence of being "all alive," causing him to conclude that the work of destruction had, to say the least of it, been premature, thereby depriving himself of the accidental good fortune that once befel—A RENFREWSHIRE BEE-KEEPER.

HONEY REMAINING FLUID.

CAN you give a reason why our honey will not harden? It is well-tasted, but as liquid as on the day when it was taken from the super, in June, 1864.—ISA.

[Honey that has been clarified by heat will not again solidify. If, therefore, yours has been exposed to a very high temperature it will always remain fluid. Heath honey has also, to some extent, the same property under any circumstances.]

ANTS IN A BEE-HOUSE.

I AM much troubled with black ants, which are swarming up my bee-house, an open one, and I have failed to discover their nest. I have tied rotten yarn round the legs of the house or stand, but it does not stop them. Is there any danger of these insects making a lodgment within the hive?—B. B.

[Try smearing the woollen yarn with tar. If this does not do nail a bit of sheepskin with the wool outwards round every leg and smear the wool with tar. Ants are not likely to effect a permanent lodgment in a bee-hive.]

OUR LETTER BOX.

FOWLS TRESPASSING (F. G.).—Let your solicitor write to your neighbour, giving him notice that if he does not keep his fowls at home you will sue him for damages in the county court. If he does not attend to that notice sue him, as you gave him notice. Prove a sixpenny damage done, and that will render him liable to all the costs. You cannot legally shoot the fowls.

MALFORMED EGG (G. M.).—There is nothing uncommon in such malformations. Keep the hen on rather lower diet for a time.

FLOWERING CURRANT (Birmingham).—The shade of the bush will be grateful to your poultry, and certainly will not be injurious to them in any way.

PIGEON'S EYES WATERING (A. W.).—Bathe the Pigeon's eyes with some cooling lotion. Give the bird a rhubarb pill for two or three successive mornings, and cold hampered.—R. P. B.

PRESERVING BIRDS' EGGS (C. Hughes).—In selecting eggs for your cabinet always choose those which are newly laid. Make a medium-sized hole at the sharp end with a pointed instrument. Having made the hole at the sharp end make one at the blunt, and let this last hole be as small as possible. This done, apply your mouth to the blunt end, and blow the contents through the sharp end. If the yolk will not come freely run a pin or wire up into the egg, and stir the yolk well about. Now get a cupful of water, and, immersing the sharp end of the shell into it, apply your mouth to the blunt end, and suck up some of the water into the empty shell; then put your finger and thumb upon the two holes, shake the water well within, and after this blow it out. The water will clear your egg of any remains of yolk or of white which may stay in after blowing. If one suck-up of water will not suffice make a second or third. An egg immediately after it is produced is very clear and fine, but by staying in the nest, and coming in contact with the feet of the bird, it soon assumes a dirty appearance. To remedy this wash it well in soap and water, and use a nail-brush to get the dirt off. Your egg-shell is now as it ought to be, and nothing remains to be done but to prevent the thin white membrane (which is still inside) from corrupting. Take a wine-glass, and fill it with the solution of corrosive sublimate of alcohol; then immerse the sharp end of the egg shell into it, keeping your finger and thumb, as you hold it, just clear of the solution, apply your mouth to the little hole at the blunt end and suck up some of the solution into the shell. You need not be fearful of getting the liquor into your mouth, for, as soon as it rises in the shell, the cold will strike your finger and thumb, and then you should cease sucking. Shake the shell just as you did when the water was in it, and then blow the solution back into the glass. If you wish your egg to appear extremely brilliant give it a coat of mastic varnish, put on very sparingly with a camel-hair pencil. Green or blue eggs must be varnished with gum arabic—the mastic varnish is apt to injure the colour.

IS ROUP INFECTION? (H. S.).—It is a disputed point. If the fowls were in robust health they might escape, though put into a roopy yard; but if they were at all out of condition they would catch it. We advise you to have it thoroughly lime-washed, and the floor picked up, and fresh-covered with gravel and earth. We know no means of making a red deaf-ear white. If shown against birds with white ones he would be beaten. Eggs, chopped meat, beer, and white peas are all good for feeding-up Game fowls.

GLASS IN A HEN'S CROPP (J. E. G.).—We have never seen so much glass taken from the crop of a fowl, but we have often seen pieces of tobacco pipe and of crockery taken from the crop. Their size and length prevented them from passing into the gizzard, if you mean that as the stomach. The object is the same in every instance: the gizzard requires stones or equally hard substances to grind the food which passes into it from the crop. The birds pick up stones if they can find them—failing that, they take anything they can get to act as stones for the mill. An overloaded stomach, or the presence in it of food they cannot digest, leads them to pick up every and anything. In this instance there is no doubt the presence of the glass in the delicate passages causes exquisite pain. Her reeling backwards was an effort to escape from it. The crop may be opened easily in this way—pick off the feathers down the front about half an inch wide, with a sharp knife cut it open $\frac{1}{2}$ inch in length; introduce the finger and withdraw all it contains. As soon as it is empty sew it up, and when that is done rub the stitches with plain healing ointment; then sew up the outer skin. This is the part of the operation that requires the most care. The crop is quite distinct from the outward skin, and if the operator is nervous, or the fowl filletty, it sometimes happens the two are sewn up together. It is a fatal mistake—the outer suture should be sewn closely, and then rubbed with pure grease or ointment, so that every opening is filled up. The bird should then be put in a quiet and darkish place, and fed only on gruel for a few days. If the patient goes on well, ten days, or at most a fortnight, generally make a cure.

SALVIA NEMOROSA SEED (J. W. J.).—This bee-flower is a native of Germany, and not of sufficient beauty to be cultivated as a garden ornament. Perhaps Messrs. Carter, Holborn, or some other of the large seedsmen of London could obtain it.

PAINTING HIVES (J. A.).—Either wooden or straw hives, if otherwise efficiently protected, are, we believe, decidedly the worse for being painted on the outside.

CHLOROFORM FOR BEE-SUPEFYING (Jersey).—Your correction is incorrect, the Number of each Journal is at the bottom of its first page, and is not removed with the advertisements when the volume is bound. Several of our correspondents have tried chloroform for stupefying bees, and all agree in declaring the results very unsatisfactory.

TRANSFERRING BEES (Simon).—Transferring a stock is, under any circumstances, far too difficult an operation for a novice, and can only be satisfactorily performed when the new domicile is fitted with either bars or frames, conveniences which are entirely unknown in Nutt's hives. Messrs. Neighbour, 149, Regent Street, and 127, Holborn, publish such a catalogue as you require.

SUPERING A STOCK (Bert).—Putting on a small glass will not prevent an early swarm. After swarming the remaining bees will rarely fly in a super during the same season. If you obtain a strong and early swarm you may super it with every prospect of success. Should the season turn out a good one you may reasonably expect it to leave you in possession of two colonies of bees and a moderate honey harvest.

BUYING BEES (Yorkshire Subscriber).—The best time for purchasing stocks of bees is in the spring, as soon as the dangers of winter are past. Swarms may be ordered beforehand, hived in your own hives, and should be brought home in the evening of the day on which they issue. Swarms vary in price from 10s. to 20s.; stocks from 20s. to 40s., according to the locality and other circumstances.

LONDON MARKETS.—MAY 1.

POULTRY.

We have but a poor supply, and poultry is consequently dear.

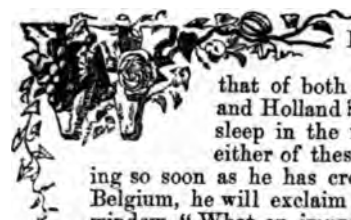
	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	4	0	4	6	Grouse	0	0	0	0
Smaller do.	3	8	4	0	Partridges	0	0	0	0
Chickens	2	9	3	0	Hares	0	0	0	0
Goatskins	7	0	7	6	Rabbits	1	4	1	6
Ducklings	4	0	4	6	Wild do.	0	9	0	10
Guinea Fowls	2	6	3	0	Pigeons	0	9	0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MAY 9-15, 1885.	Average Temperature near London.			Rain in last 35 years.	Sun Rise.	Sun Set.	Moon Rise.	Moon Set.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.								
9	Tu	Walnut flowers.	61.8	59.5	60.1	15	19 4	53 7	21 6	41 3	14	m. 5.	129
10	W	White Lily flowers.	62.0	59.8	60.4	16	18 4	55 7	23 7	9 4	15	3 45	130
11	Th	Red Clover flowers.	62.4	60.7	61.0	16	16 4	56 7	24 8	42 4	16	3 50	131
12	F	Partridge lays.	63.0	61.3	62.1	18	15 4	58 7	23 9	33 5	17	3 52	132
13	S	Columbine flowers.	63.6	59.0	61.3	18	13 4	59 7	14 10	10 6	18	3 53	133
14	Sun	4 SUNDAY AFTER EASTER.	63.8	60.9	62.1	16	11 4	61 7	0 11	4 7	19	3 55	134
15	M	Lily of the Valley flowers.	64.8	61.1	62.9	14	10 4	62 7	40 11	4 8	20	3 53	135

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 63.0°, and its night temperature 40.3°. The greatest heat was 86° on the 15th, 1833; and the lowest cold, 25°, on the 15th, 1850. The greatest fall of rain was 1.14 inch.

MISCELLANEOUS NOTES MADE IN HOLLAND AND BELGIUM.



HY does the farming of Belgium so far excel that of both its neighbours, France and Holland? Let a stranger go to sleep in the railway train whilst in either of these countries, and awaking so soon as he has crossed the frontier into Belgium, he will exclaim on looking out of the window, "What an improvement in the agriculture!" In all the three countries the farms are usually very small—from five to twenty acres—but in Belgium alone are they intelligently cultivated; in fact, the farming is gardening on a large scale—every crop is weedless; every watercourse is neatly opened. Spade-culture prevails, and in digging you see that trenching is usually practised to bring fresh soil to the surface. Manure is applied very abundantly both in a solid and liquid state. In the liquid form it is distributed to the growing crops from a tub by a man standing in the cart and delivering it right and left by the aid of a jet.

In the window of a dog-fancier's in St. Martin's Lane may be seen a mild notice that "Puppies' tails are regulated," and if it be true that shepherds' dogs' tails are "regulated" in the west of England through so many generations that at last the puppies come into the world tail-less, then may we not be surprised to hear of young Dutchlings being born with cigars in their mouths. Smoking a cigar is a Dutchman's normal state—he smokes all day—he smokes going to bed—some smoke in bed—he smokes first thing when he wakes—and a spittoon filled with sand is in each bed-room to save the carpets from salivary deposits. Fumigation in the plant-houses can rarely be needed—the gardeners fumigate them naturally.

The present Botanic Garden at Amsterdam has been established about two centuries, and is memorable as having had among its curators the two Commelins, and being the first in Europe to cultivate the Coffee tree. There is now there a *Taxodium distichum* which must be about the first of the species introduced from North America; for it is certainly more than two hundred years old—the gardener said three hundred. It must be fully 60 feet high, and its stem 2½ feet in diameter. This is in the open garden, and in the greenhouse are noble specimens of *Encephalartos caffer*, *Sabal mexicana*, *Cycas revoluta*, and *Livingstonia chinensis*; they are from 20 to 30 feet high. But to the garden generally no praise can be given.

In a nursery at Amsterdam we saw a specimen of *Salvia argentea*, a silvery, woolly-leaved plant very different from the silvery plants usually employed for edging by our bedders-out. It is a native of Crete, and introduced more than a century since. It will bear our climate, and deserves to be more frequently employed for that purpose.

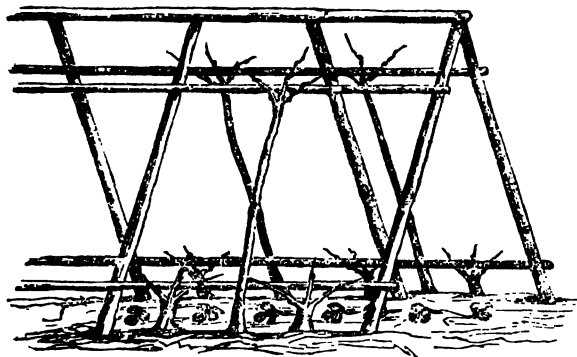
The Zoological Garden at Amsterdam is well supplied with specimens, and is well kept up. Pisciculture has

roused even Dutchmen, and we saw there troughs rearing various species of Salmo—*Salmo salar*, *trutta*, *lacustris*, *umbla*, and *fario*. There we also saw excellent specimens of the Breda fowl. They deserve to be introduced into this country. The grey variety, with its dark-laced plumage, is especially handsome. They are of full average size, the adult cock weighing 7 or 8 lbs. We think our Zoological Society would act usefully if they had a poultry department, and kept separately model specimens of all the varieties of our domestic poultry—Turkeys among the rest, which we mention to enable us to say that the servant is represented bringing in that bird—cooked, yet in its plumage—in that wonderful picture of civic portraits by Vander Helst, which would fully recompense any one voyaging to Amsterdam to see—and that "Evening School," by Gerard Dow, for which more than £6000 have been offered—and that candle-illuminated portrait of our William the Third, by Schalken—and that Hare, by Weenix. That picture by Vander Helst abides upon the memory. There are more than twenty life-sized, full-length portraits, each marvelously real, even to the wrinkles of the silk stockings. One cannot but regret that they are all effigies of plain burghers—"The Civic Guard celebrating in 1648 the anniversary of the Treaty of Munster"—not a man among them celebrated for more than being a wholesaler of Schiedam. Perhaps, however, there are some of the great Tulip-speculators among them, so that restores us to our legitimate position; and we may now with restored equanimity journey on to Antwerp, and more comfortable by having relieved our minds by that enumeration, though it has nothing to do with gardening. Let us remark, also, that in a room of one of the railway stations, between Amsterdam and Antwerp, we saw in a hanging-basket one of the trailing plants best adapted for that mode of culture, yet seldom seen in England—*Senecio platanifolius* (?).

Well, we once more pass among those never-changing straight roads and dykes, sentinelled on each side by Willows, monotonous in form and at monotonous distances. We acquired a scrap of knowledge about those trees from Mr. Van Geert. When they are planted their stems are about 2 inches in diameter, and all their roots are cut off at the time of planting, as they emit fresh roots very readily, and these enable the trees to acquire a more rapid growth than those trees from which the roots are unremoved. Each tree is expected to increase a franc in value every year—that is, when felled at forty years old, that they shall each sell for 40 francs.

Mr. Van Geert's nursery is fully worthy of a visit, and if at the same time an introduction is gained to that gentleman, an acquaintance will be made with one who will be called to remembrance when suavity of manner combined with unobtrusive knowledge is named. He vends trained fruit trees extensively, and his mode of training enables him to grow a larger number than usual on a given space. He manages it after the fashion represented on the next page.

The poles of which the trellis is made are about 2 inches in diameter, 6 feet high, and that distance apart. The side



laths to which the trees are tied are, of course, smaller. A rider tree is grown between each pair of dwarfs. Mr. Van Geert has the wood of which these trellises are constructed impregnated with creosote. This is done by pressure by the process employed to impregnate the railway sleepers. Trellises made of wood thus impregnated, and erected in 1858, are now quite sound, whilst others constructed of unimpregnated wood have had to be renewed twice, and in some instances thrice. The creosoting only doubles the cost of the wood, but it more than quadruples the durability. Instead of laths at the sides Mr. Van Geert has recently substituted wide-meshed galvanised wire net, which much facilitates the training. Between the trellises Mr. Van Geert grows a row of Strawberry plants.

On the panels of the entrance hall of his residence are painted large maps, detailing the railroads of Europe. Similar maps are also depicted upon the panels of the rooms at the railroad station, being much more useful and much more ornamental than the usual occupants of these spaces. Antwerp in this as well as in more pretentious works of art is indeed a city of pictures. No one knows what Rubens could do until he has seen the "Descent from the Cross" in this city's cathedral. It is most justly considered the second of the three great pictures of the world. Even his "Elevation of the Cross," which is its near neighbour, looks, when compared with it, coarse, vulgar, and exaggerated.

We may be excused for referring to those pictures, because we have to notice that we have been shown three fragments of the real cross discovered by the Empress Helena. We marvelled that they were each of a different species of wood, and we expected to be told that they only seemed so to our heretical eyes, but the reply was, "the cross of Calvary was formed of three kinds of wood." We certainly were heretical then, but we find tradition bears out the assertion, and alleges that the upright shaft was of Cedar, the cross beam of Cypress, and the inscription was written on a plate of Olive wood. Whether there be any truth in the tradition we know not, but we do know that Rubens's chair, preserved in the Antwerp Museum, is of sturdy Oak, and quaintly fashioned. There were half a dozen chairs closely similar to be sold by auction in the market-place, and we wished that that market-place was Covent Garden, for then purchase would not have been forbidden by difficulty of transport.

Ah! that market-place and many others are thus resummoned to "our mind's eye." Whence came all the eggs we saw in those places of merchandise puzzles us—long rows of women in black cloaks and white caps, each two baskets strong, and each basket with at least a hundred eggs in it, lay-red alternately with straw, were ever present. We did not see many fowls spread over the face of the country, and those we did see did not look as if they would help rapidly to fill such baskets—mongrels all.

Then the multitude of pots of Mignonette in those markets! Easter was approaching, and not only citizens' wives, but wives from the country, were intent on taking pots of the "Little Darling" to perfume their homes on the great festival. We have a great mind (therefore we shall not,

for when one has a great mind to do a thing one never does it), to relate the legend why the Count of Saxony had a spray of Mignonette in his coat-armour with the motto, "Your qualities surpass your charms;" but we will make the more prosaic observation that the Mignonette of the Belgian markets is a more robust variety than that usual in England. Its leaves are more ovate, thicker, and bullate. One plant is grown in a pot, and its branches, mostly four in number, grow quite upright and as sturdy as minute Mullein plants. We find that we were not singular in this observation; for Mr. Reeves, nurseryman, Bayswater, noticed these peculiarities, obtained some of the seed, and finds the seedlings retain the characteristic differences.

And now let us away to Brussels, not, however, to be tempted by the lace at 200 francs per yard. Yet we will pause to observe that there is something suggestive even to the gardener in that lace. It can only be made from Flax grown in one locality—Hal. In no other place has Flax been produced having so delicate a fibre. Various trials have been made to produce it elsewhere, but they failed. Now, this may teach the owners of mansions not to be rash in concluding that their gardeners are incompetent, because they do not raise certain garden products so excellent as they are raised in some other parts of our islands. We knew a garden that would not yield a crop of Raspberries; we know another in which the Carrot has no tap root; and many of our readers must be acquainted with other illustrations of the lesson taught by the Flax of Hal.

We will at once pass on to the new drive, of two hours' duration, now completing in the forest adjoining Brussels. It is very gracefully planned, and will be a most grateful resort in summer.

With that forest is associated one of Britain's most glorious days. Through this sixty square miles of almost exclusive Hornbeam marched a chief portion of our army to the field to Waterloo.

"Solemn waves above them her green leaves,
Dewy with nature's tear-drops as they pass,
Grieving, if aught inanimate e'er grieves,
Over the unreturning brave."

When our readers are perusing this, since that morning within a month of half a century will have passed. We stood upon the bright green turf that environs the farm of Mont St. Jean, and all was so undisturbed, and the sun shone so bright, and the air was so balmy and so still, that we scarce could realise the fact that even fifty years ago that farm-house was crowded with the lacerated and the dying, and that beneath our feet, wherever we trod, were the bones of the dead of that day.

On we went, and on a grassy bank we picked from a multitude a few Daisies "for remembrance;" and on that bank stands the trunk of a White Thorn, gnarled and scathed by the vicissitudes of many years. By that White Thorn fell the brave old Welshman Sir Thomas Picton, who, with a foreshadowing of what was at hand, wrote home "When you hear of my fall you will hear of a bloody day." The traveller in passing that bank has by his other hand the monument raised by a sister and five brothers to record the high and loveable characteristics of Colonel Gordon.

Near that grew what was called "The Wellington Tree," but it was removed when the soil had to be upheaved to form the lion-surmounted mound raised by the Belgians commemorative of the victory. Nor does the tree deserve regret, for its notoriety was founded on falsehood. Our great commander took a position far away to the right of that tree nearer to Hougomont, being too old a campaigner to place himself needlessly near the most prominent object on the field, and which would not fail to attract the notice of the French artillerists.

Here, too, stands the monument recording how bravely fought, and how many were slaughtered of the gallant German Legion—slaughtered comparatively unresistingly from an oversight, for their commander had not secured a sufficient supply of ammunition; and here, with its now trimly enclosed garden, is the little farm homestead, La Haye Sainte, where they fought and fell. The loop-holes in its walls through which they fired, and the perforations made by the bullets of their assailants are still visible. By that garden side, too, died, and was buried where he died, that hero of our cavalry—Shaw, the Life-Guardsman, he, who single-

handed, slew so many of the Cuirassiers. Ay! and there is the slope along which they swept to attack our Infantry squares—

"On came the whirlwind—steel-glance broke,
Like lightning through the rolling smoke."

but that steel could carve no entrance into those living quadrilaterals.

"Shaw was a warrior stout and keen,
And had in many a battle been."

But they were battles in the prize-ring, for he had been a pugilist, one of the heavy weights, and Viseur, one of the Belgians employed in burying the dead, told that he and his helpmate had to exert all their strength to lift Shaw to his grave. Nor is he without some title to a remembrance in our pages, for he was either the son or nephew of a gardener.

Yonder, in the vale between the two ridges on which the opposed armies were positioned, is another château and garden, of more pretensions, for it has a chapel, and an orchard, and is within a walled enclosure; that château is Hougoumont; under that row of trees beyond was the artillery of Jerome Buonaparte, from those cannon was the first fire delivered on the day of Waterloo, and the ball was directed against Hougoumont. It was the key of the British position, and was prepared for defence, and was assailed proportionately to its importance. Its orchard trees were shattered to splinters by the French artillery; its roof was battered in; the trunks of the trees around are literally tessellated with the scars where bullets pierced them; the chapel was in a blaze from the French shells, and the flames burnt off the feet of the figure on the Cross, and there, we were assured, they arrested their course. Predatory insects are less reverential, for we never saw a wooden image more worm-eaten. Again and again the French infantry penetrated to the gates of the château, and as often they recoiled before the fire poured upon them by our Guards. The loop-holes in the orchard-walls remain as they were on that day of slaughter, and beneath one, where he fell, is the grave of Captain Lane Blackman, of the Coldstreams. How did that grave contrast with the old Cornus mas which was its neighbour! That tree was a contemporary of the battle, and its shattered trunk is now crowned by but one branch, yet that was profusely covered with its yellow flowers. Nor was that the only contrast—a hundred anecdotes of the sanguinary strife within and around those walls recurred to our memory, and seemed incompatible with the quietude, and the bright sunshine. The songster instead of having suggested to him deeds of "The British Grenadiers," might have written

"If there's peace in this world to be found,
A heart that is humble might hope for it here."

Yet even on that bright sunny day, a little domestic warfare was only concluding. The present lady of Hougoumont is "passing fair," and the lord of Hougoumont is pugnacious when homage is paid to that fairness, and the lady's father had intervened that day, and peace was being effected, and the lady looked, not penitent, but as if she thought she had the best of it, as she chatted whilst we wrote our names in the album, made obeisance, cut a twig from the Cornus and departed.

Slowly we turned back towards Mont St. Jean, and reaching the high ground again, rested upon a bank that crowned its summit. That bank should never be removed, for from behind it rose our Foot Guards, poured in a volley, gave one hurrah! and finished with the bayonet, the last charge of the French at Waterloo. The decisive moment had arrived, the whole line was formed three deep, dashed down the declivity, and swept the enemy before them.

The Prussians had come up and were assailing the left flank of the French. They debouched from the Forest of Frischermont, guided by a Belgian, whose name deserves preservation. Dumortier was a gamekeeper, who knew every road and path of the forest, and when called upon to act as guide, he led the troops on the high ground so as to come out in the rear of the French—"Then," as he said, "we shall take them all!"

And, now, warning our readers not to buy walking-sticks of the Waterloo vendors, for no such sticks grow in that locality; bidding them look, but not stop, at the Hotel des

Colonnes, at Mont St. Jean, for there Victor Hugo resided for months whilst he wrote "Les Misérables;" and advising them to have Martin Viseur as their guide, we bid good-bye to Waterloo, and depart for Ghent.—G.

(To be continued).

AURICULAS IN 1865.

THERE is some wise and cynical philosopher who says that people are never so happy as when contemplating the misfortunes of others—a maxim which I should be very sorry that any of the readers of THE JOURNAL OF HORTICULTURE should either think that I hold, or should themselves maintain; but there is a grain of truth in it, which I conceive to be this, that it does somewhat tend to lessen the depth of one's own misfortunes when we find that others are sharers in the same calamity. I do not know, but I suppose if the table at an exhibition gave way, and Jones found that his plants were the only ones that had suffered, it would considerably add to his indignation: whereas if Brown and Robinson met a similar fate I am afraid it would considerably lessen the severity of the blow.

Before I left home for a very hurried visit to Ireland I had been horribly disgusted at the appearance of my Auriculas. I had not only lost a considerable number, but I had a very indifferent bloom, plants that looked well only throwing up a truss of three or four pips, and I began to think there must be something very wrong in my treatment, and yet I had managed them as usual. The compost I knew was good, and the plants did not look unhealthy. I was cogitating as to what could possibly be the reason, and proposing to myself some alterations, when I derived a grain of comfort from seeing that at the exhibition of the Royal Horticultural Society on the 15th April only one prize was awarded, and that a second. Oh! oh! I began to think I am not singular, and this long and severe winter has had something to do with it; and when I received from the best Auricula-grower in the kingdom, Dr. Plant of Monkstown, in answer to my intimation that I hoped to pay him a visit, a letter saying that his had never been so bad, I took heart of grace, and began to think I was not alone in my misfortunes. However, as I knew what his Auriculas generally are, I did not quite take in what he told me—that he had nothing to show me, and thought that what he called nothing I should consider a great deal; and so, very soon after my arrival in Dublin, I found my way out to Plantation, and saw with my own eyes the state of his far-famed collection. So far he was right, that I never saw them so poor, while, as I rightly judged, there was still a good deal to see. I found that he had himself been indisposed during the winter, that he had lost the services of his old gardener, and that hence the plants had not been so well cared for as usual, so that he had lost upwards of two hundred plants (this will give some idea of the extent of his collection), while he complained of the very same thing that I had found—the smallness of the trusses. Need I say that while I was really sorry for it, it did give me some little comfort to find that I was in the same plight as one of the very oldest, and certainly the best of growers? There were none of those wonderful trusses of Booth's Freedom and Hey's Apollo that I had seen before—the wonder and astonishment of all who ever saw them; but still, as I have said, there were some fine blooms.

George Lightbody. Dr. Plant agrees with our estimate on the other side of the Channel, that it is the very king of Auriculas, combining more really good properties than any other Auricula known, and of this I saw one very fine bloom, and do not wonder that it still maintains its very high price.

Parker's Metropolitan, self, is a favourite flower of Dr. Plant's. It does indeed throw a fine truss of bloom, but it has the defect of very soon flying—that is, the colour becomes mottled; and I have known a plant put into a box in fine condition and the next morning to be totally unfit for exhibition.

Fletcher's Mary Ann is another excellent show flower despite the defect which makes it so distinct amongst all others of its class—namely, the smallness of the eye.

Fletcher's Ne Plus Ultra was fine, but there were no trusses equal to what I have frequently seen here. It is no

doubt a striking flower, but it has a tendency under high cultivation to become coarse, a fault of a grave character in an Auricula—no more to be tolerated in it than in one of the gentle sex.

Campbell's Lord Palmerston was a good green edge, but it has a tendency to throw off offsets—a good plant for a nurseryman therefore, but at the same time preventing it from having a good truss. When it is so caught, notwithstanding being slightly thrum-eyed, it is a nice flower, apparently a seedling from Beeston's Apollo.

Booth's Freedom was the very finest of green edges, even although the trusses were not equal to what I have seen before under Dr. Plant's care.

Colonel Taylor, notwithstanding the high price it still commands, is mainly to be valued for the intense beauty and purity of the edge, for the shape of the flower is starry, and the paste is thin, but nothing can be more pure than the bright green of the edge.

Blackbird. Dr. Plant was loud in his praise of this, which is certainly a most beautiful self and a free grower. It is not, however, I think, equal to Lightbody's Lord Clyde, which was not, however, in this collection, where I fancy the favourite still is Hey's Apollo, than which nothing can be more beautiful. The colour is something like that of Spalding's Metropolitan, but it is a larger trusser than that variety.

Popplewell's Conqueror, albeit the edge has somewhat of a greyish tint in the white, is largely grown here, and is always a commanding flower, but it is not equal to Taylor's Glory, which, despite new additions to the class, I must still regard as the best of white edges.

Heap's Smiling Beauty, it is true, is fine, but it is somewhat cropped, and has not that beautiful flatness and smoothness that marks Glory. I had a good opportunity of comparing all three, and must still hold to the opinion I have mentioned, and yet Glory is scarce, one can with difficulty procure it. Whether this arises from the demand or from a difficulty of growth I know not, but I do know that I have found it very hard to keep.

These were amongst the most remarkable flowers I noticed here, and I should say that while Dr. Plant's collection is very large, it is also very select, and comprises, comparatively speaking, but few varieties. And now, as I sit in early morn jotting down these few notes, in the house of a dear and valued friend, and my eye rests on one of the finest scenes it could well behold, where a rising and prosperous city lies beneath one's feet, embosomed in the midst of verdant hills, and nestling on the banks of a wide and world-renowned river, for the maiden city of Derry is before me with all its historic recollections, so dear to every lover of freedom and of truth, while the past comes with all its powerful recollections of happy days, my thoughts wander off to my own wee lot, and I wonder what I shall have to record of them, whether they have felt the loss of my care, or whether I shall find them full of vigour and life; and as the gathering clouds in the west portend that the long-looked-for rain is coming at last, I (for we all think of ourselves) wonder whether my own little plot is getting the refreshment it needs. Here, too, let me add that THE JOURNAL OF HORTICULTURE is making itself heard in this far northern part of the island, and floriculture is making its way. Amidst the signs of progress in "ould Ireland" let not this be unnoticed, for amongst those things that tend to soften and to elevate floriculture must take a prominent place. It cannot take the place of higher and holier things, but it can do much in its own peculiar way, and I am sure all who wish well to old Ireland will say, May the taste for floriculture take the place of the snipe-shooting, the jockeying, and the revelry of the good (?) old times.—D., Deal.

SOFTENING HARD WATER.

IN reply to Mr. Robson's inquiry in your No. 213, as to the best mode of softening chalky water, I beg to inform him that lime exists in hard water in two different states. Sometimes it exists as a bicarbonate—that is to say, as chalk rendered soluble by carbonic acid. Such is the water of the Thames. In this case there are two remedies—the first is

boiling, which liberates the carbonic acid, and thus precipitates the chalk; the second, which is applicable to large quantities, is the addition of lime water, which, uniting with the acid, becomes itself chalk, and is precipitated with the chalk originally contained in the water. The mixture should remain undisturbed for twenty-four hours, and then be poured off.

But lime often exists in water either as a muriate or sulphate. In this case there is no absolute and perfect remedy, but the best thing is to add kitchen soda to the water; this precipitates the lime as chalk, but the water is not left pure, as it will contain either muriate or sulphate of soda. These, however, are not injurious to roots generally, though not desirable when the water is used for syringing. I believe that much of the evil of hard well water arises from its low temperature.—G. S.

ROYAL HORTICULTURAL SOCIETY.

MAY 2.

FLORAL COMMITTEE.—This was the most successful meeting that has been yet held. The number of entries of the plants sent for examination exceeded one hundred, and the collections so numerous sent, containing plants for comparison, were most excellent. The Orchids formed quite an exhibition of themselves. Mr. Williams, Holloway, received first-class certificates for *Phonicophorium sechellarum*, a new and beautiful Palm, and *Asplenium alatum*, an elegant Fern; a special certificate for a fine specimen of *Cypripedium caudatum*; also a special certificate for his general collection, among which were *Smilax macrophylla*, a handsome variegated-foliage plant, *Anthurium magnificum*, identical with *Anthurium cordifolium*, and *Maranta Van den Hecke*, too small a plant to judge of its merits. Mr. Turner received first-class certificates for two most beautiful seedling Alpine Auriculas, John Leech and Meridian, and a second-class for Auricula Titian. Such a collection of Alpines or selfs has never been exhibited in public before: the neatness of the plants, the size of the pipes, and the varied tints of colour from dark brown to purplish black, from bright scarlet to pale lilac, commanded universal admiration. For this collection a special certificate was awarded to Mr. Turner, and another was given for his large and beautiful collection of grey and green-edged florists' varieties of Auriculas. A special certificate was likewise given for a collection of Pelargoniums, which were in great perfection and beauty, also one for the general collection of plants. Mr. Turner exhibited several seedling Pelargoniums and Auriculas, which were good in their way, but not equal to other varieties.

Messrs. Low, Clapton, sent a collection of very beautiful and interesting Orchids. A first-class certificate was awarded to a new and very beautiful *Phalsenopsis*, *Luddemanniana*, a very distinct kind with mottled rosy flowers; and a special certificate was awarded to the collection. Dr. Pattison, St. John's Wood, had also a first-class certificate for *Phalsenopsis Luddemanniana*. Mr. Stone, gardener to J. Day, Esq., exhibited an extremely interesting collection of Orchids, containing many valuable kinds. A first-class certificate was awarded to *Phalsenopsis* sp. Moulmein, a very minute but lovely form of this genus; and a special certificate was awarded to a finely grown specimen of *Dendrobium densiflorum*, covered with its exquisite spikes of yellow flowers. Among others in this collection were *Dendrobium chlorops*, *D. Farmeri*, *D. tortile roseum* (a very fine specimen), and *Cologyne corniculata*. There were some of these which deserved to have been specially noticed, but not having been entered for examination did not receive certificates. A special certificate was awarded to this extremely beautiful group of Orchids. Mr. Lawrence, gardener to the Bishop of Winchester, sent an unusually fine specimen of *Epidendrum prismatocarpum*, which received a first-class certificate; and Mr. Lloyd, gardener to C. M. Caldescott, Esq., sent a seedling plant of a variegated form of the Ivy-leaf Pelargonium, called Silver Gem; the white variegation was very remarkable, and a second-class certificate was awarded. Mr. Wilson, gardener to W. Marshall, Esq., sent *Dendrobium tortile roseum*, which received a first-class certificate. Mr. Veitch most liberally contributed to the in-

terest of this meeting. First-class certificates were awarded to *Gymnogramma retrofracta*, *Rhododendron Henryanum*, a very promising variety, with large bold white flowers, resembling *R. Gibsoni*; *Primula cortusoides grandiflora alba*, a pure white variety; *Odontoglossum Pescatorei*, a fine specimen; and *Saccolabium curviflorum*. Many other fine Orchids were exhibited in this collection—*Lælia grandis*, *Epidendrum vitellinum*, *Cypripedium barbatum purpureum*, *Calanthe Darwinii*, plants of *Bomarea Caldasii*, *Glycine frutescens alba*, *Peperomia acuminata*, *Azalea Vesuvius*, &c., were also exhibited. A special certificate was given for the whole collection, and a similar award for a collection of *Azaleas* in great perfection.

Mr. Bull sent a large and interesting collection of plants. First-class certificates were awarded to *Aubrietia purpurea variegata*, a very pretty spring-flowering plant, and *Woodisia polystichoides Veitchiana*, a very elegant Fern. In this collection was *Rhododendron thibaudioides*, as unlike a *Rhododendron* as a Rose; *Primula intermedia*; *Podocarpus macrophyllus albo-variegatus*; *Aucuba longifolia variegata*, &c. Mr. Parker, Tooting, sent cut specimens of his beautiful *Rhododendron Countess of Haddington*; also an *Iberia*. Mr. Noble, Bagshot, exhibited two groups of *Clematis Fortunei*, and *C. Standishii*, consisting of plants of all sizes, from small cuttings to fine specimens, all of which were profusely covered with most attractive flowers. A special certificate was awarded to each group. Mr. Pilcher, gardener to S. Rucker, Esq., sent specimens of *Phalenopsis Luddemanniana* and *Cattleya sp. amabilis* (?), both of which were awarded first-class certificates. Messrs. Backhouse, York, sent four small plants, each a gem in itself—*Narcissus juncifolius*, *Primula ciliata*, *P. farinosa acaulis*, and *Andromeda hypnoides*—each of which received a first-class certificate. Mr. Wm. Paul sent a collection of the late Mr. Donald Beaton's superb *Nosegay Pelargoniums*, which received a special certificate. The Chairman, the Rev. J. Dix, was requested by the Committee to commend to the Council's special notice the valuable and interesting collection of plants exhibited by Mr. Veitch and Mr. Turner as worthy of the Society's medals.

FRUIT COMMITTEE.—Several large tubers of Pink-eyed Regent Potatoes were exhibited by Mr. W. Ingram, gardener to the Duke of Rutland, Belvoir Castle, and which were stated to have yielded at the rate of 20 tons an acre. Lady Dorothy Nevill, Dangstein, sent a pot of jelly made from the fruit of *Passiflora quadrangularis*, and which was highly approved of. The following is the receipt for its preparation: Peel and cut the fruit before it becomes over-ripe; cover with spring water, and allow the fruit to boil till quite tender. Then strain through a jelly bag, measure the juice, and to one pint of juice add half a pound of loaf sugar, the rind of four lemons, and the juice of six; then boil very quickly till stiff enough to turn out of the mould. A Queen Pine Apple of good size and well ripened, and a dish of Apples, were also exhibited.

THE scientific meeting held on the same day as the above Committees, was so numerously attended that the capacious Council-room, though closely packed, was insufficient to hold all the audience, some of whom had to stand in the passage. Altogether it was the most brilliant and successful meeting which the Society has ever had, exceeding even the best of those held in its palmiest days, and as Mr. Bateman justly remarked at the conclusion, one among other signs of the returning tide of prosperity.

After the Chairman, W. Wilson Saunders, Esq., had congratulated the meeting on there never having been so fine an exhibition, nor finer things exhibited, the Rev. M. J. Berkeley adverted to some of the objects at the last meeting, and stated that the *Ardisia* then shown by Lady Dorothy Nevill was *Ardisia acuminata*, var. *decipiens* of De Candolle; also, that Dr. Hanstein had been successful in making the sporangia of the *Nardoo* plant germinate, and referred those who were curious about the matter to Pringsheim's Journal. He then passed in review the plants shown on this occasion. Among others noticed were Mr. Bull's variegated *Chrysanthemum Sensation*, the variegated *Aubrietia*, and the variegated *Podocarpus macrophyllus*, which he remarked had one of its branches perfectly white, but such a branch though

it would probably send out a green shoot, could not be propagated from. With regard to the *Clematises Fortunei* and *Standishii*, the latter was perfectly hardy (and the former, coming from the same place, would appear to be equally so), had the merit of flowering when only a few inches high, and that a flower from a plant of that size had been measured by the Committee and found to be 5 inches across. *Rhododendron Henryanum* was stated to be a hybrid of which *R. Dalhousianum* was one parent, and another hybrid of very different appearance was of the same parentage. Another *Rhododendron*, *thibaudioides*, at first sight seemed more like a *Thibaudia* than anything else, but was, nevertheless, a true *Rhododendron*. Some *Rhododendrons* were virulent poisons, *R. cinnabarinum* being one of the worst, and the nearly-related genus *Gaultheria* was also poisonous, though some of the species had edible fruit. *Kalmia latifolia*, too, was poisonous to birds, and those which fed upon it were themselves poisonous. The Alpines from Messrs. Backhouse, *Gloxinia Cordon cæleste* and *Anthurium cordifolium* from the Society's garden, which was the same as *A. magnificum* from Mr. Williams, *Woodisia polystichoides Veitchiana*, *Gymnogramma retrofracta*, and other plants were also pointed out. Mr. Berkeley then drew attention to a cone of *Wellingtonia*, gathered by himself at the Marquis of Huntley's, at Orton Longueville, and stated that he had seen a seedling only three years old with cones on it. Mr. Berkeley concluded by stating that Mr. Bateman would make some observations on the Orchids.

Mr. Bateman said, that before he came to Orchids, to show that he had more than one idea in his head, he would bring under their notice a tribe of plants hitherto in obscurity. These plants, he remarked, are widely scattered over the old and new world. They are to be found in Peru, New Grenada, Central America, Japan, and the Indian Archipelago. They are not unknown to botanists, but almost entirely so to horticulturists. His attention was first drawn to them from reading a work by Dr. Poeppig, the Peruvian traveller, who ascended the Andes, and descended the Amazon to Para, with no other companion than his faithful dog; and Dr. Poeppig stated that the young shoots of a *Thibaudia* were so brilliant that they could be seen for a league and a half, wrapping the Peruvian forest in a mantle of flame. Making every allowance for the pure air of the Andes permitting objects to be visible a long way off, he (Mr. Bateman), thought that Dr. Poeppig had been drawing somewhat largely on his imagination as travellers sometimes do; but afterwards having had his attention more closely directed to tropical *Vaccinaceæ*, and having procured some *Thibaudias*, he was struck with the colour of the young shoots, one of which he held up in his hand; and imagining what the appearance of a forest would be after the rains, when clothed with such young shoots, he thought it would be doing Dr. Poeppig injustice not to believe his account. The genus *Thibaudia*, continued Mr. Bateman, was named by Humboldt, he believed, after a distinguished foreign botanist, M. Thibaut, a descendant of whom was then in the room. In the north of England and in Scotland, next to the Heaths, the *Vaccinaceæ* were the most prominent feature of the vegetation. The Whortleberry, the Cranberry, the Bilberry, and the Cowberry were all native *Vaccinaceæ*. There was another *Vaccinaceæ* plant which had the distinguished honour of being named after a former President of the Society, *Cavendishia nobilis*, which had been described by Dr. Lindley, but he believed it had not yet been introduced, and it was to be hoped that Mr. Veitch, or Messrs. Low, or Mr. Bull, or some other of our leading nurserymen would stretch out their hands and obtain it. Looking over Dr. Hooker's "Himalayan Plants," he came across two graceful species of *Vaccinaceæ* (*Vaccinium serpens* and *V. salignum*), which were found growing at an elevation of from 6000 to 7000 feet, along with Indian *Rhododendrons*, and thinking that the same temperature and treatment would suit them, he planted them together with the *Rhododendrons* in a house facing the west, and one against a wall, but it as well as those in the house failed. One, however, on a bracket in an architectural corridor having the temperature of a warm greenhouse or cool stove, grew well. Tropical *Vaccinaceæ* should be grown in niches in the shade, or on brackets, so that their branches might hang down like those of the Indian *Dendrobiums*. Thus treated they

afforded a new element for architectural decoration, and though the specimen of *Macleania speciosissima* which he had brought before the meeting was not so good as it was a fortnight ago, it would give an idea how ornamental the *Vaccinaceæ* were when grown with their branches hanging down; it was foolish to attempt to grow them on the ground. In this class, then, there was a newly-discovered means for the decoration of architectural brackets. At present the plants suitable for that purpose were very limited in number, and these chiefly Ferns; but here we had plants beautiful in their flowers, beautiful in their foliage, and brilliant in the colours of their young shoots, added to which the fruit of some of the species was edible. He now came to Orchids. At the meeting before last, he had called attention to *Cypripedium* as a genus suitable for cultivation by those who had not room for more than one genus, and he thought the plants before them would bear out the justice of his remarks—*Cypripedium Lowii*, from Mr. Day; the dark variety of *C. barbatum* and *C. villosum*, from Mr. Veitch; *C. Hookeriæ*, from Messrs. Low; and from another quarter, *C. caudatum*, the only one which came from the old world. The question might be asked, How could the tail-like appendages of the last be arranged in the flower-buds? but these on first opening had no tails, but after they had burst the tails began to grow. The late Mrs. Lawrence had kept a journal of the rate at which they grew, and found that they elongated from 1½ inch to 2 inches a-day till 18 inches long. W. Wentworth Buller, Esq., of Strete Raleigh, stated in a letter that it would succeed under cool treatment. He would now advert to another great section of the family of *Orchidaceæ*. He believed that if he were asked what Orchids were the most brilliant, he should say the *Dendrobiums*. They competed in numbers with the *Epidendrums* of the new world; but while among the numerous *Epidendrums* there were hardly twenty worth growing, out of nearly as many *Dendrobiums* there were not twenty not worth growing. At this meeting they had before them a group illustrating the genus. There was a magnificent plant of *D. densiflorum*, from Mr. Day; Mr. Marshall, of Enfield, had sent a rising star in the *Orchidaceæ* horizon, *D. tortile roseum*; *D. albo-sanguineum*, came from some one else; *D. eburneum*, from Mr. Rucker, white exquisitely marked in the centre with red, which had he thought a great future before it, if we might judge from how other kinds had advanced. When he first saw *D. densiflorum*, of which they had so fine an example before them, it had five little starved flowers, and he thought it hardly worth looking at. Two other species, *D. Farmeri*, and *D. Devonianum*, also came from Mr. Day. *D. chlorops* was seen under disadvantageous circumstances. He would call especial attention to a new *Phalænopsis*, called *Luddemanniana*, which was now exhibited for the first time. It had been considered by Messrs. Low as identical with *Phalænopsis rosea*, but it was new and perfectly distinct. Singularly enough it had been exhibited simultaneously by Mr. Day, Mr. Rucker, and Dr. Pattison, of St. John's Wood, and though small it would probably eventually have twenty flowers on a spike, like *P. amabilis*. When he first began to grow *Dendrobiums*, *D. Pierardi* was considered the most splendid species, by degrees others were imported, till at last *D. Devonianum* was discovered by Mr. Gibson, and this Dr. Lindley called the "King of Orchids," but if it were the King of Orchids, what should be said of that which he held in his hand, *D. Wardianum*. That which he held up before the meeting was but a portion of a spike 5 feet long, bursting with flowers. There was yet one more plant which he had to notice, it was a plant introduced, or rather re-introduced, by Messrs. Low. He was present when the box containing it was opened, and Mr. Low's son stated in his letter that it was found on an old tree across a stream, and that there was nothing equal to it in Borneo. It received the name of *D. Dayanum*, in compliment to Mr. Day. Now a *Dendrobium* called *macrophyllum*, had been introduced thirty-five years ago, but it smelt like Apothecaries' Hall, on which account it was very objectionable; to another subsequently imported, Dr. Lindley had given the name of *anosmum*, because he conceived it to be without smell, but he latter smelt just as badly as *D. macrophyllum*, and he Mr. Bateman considered the two as identical. He felt

some doubts as to whether *D. Dayanum* was not the same as *D. macrophyllum*, till his gardener drew his attention to the figure of *anosmum* in "Paxton's Magazine of Botany," when he came to the conclusion that the so-called *Dayanum* was nothing more than *anosmum*. He regretted that this might have the effect of dissociating Mr. Day's name from the species, but as fresh Orchids were coming in by every mail, no doubt some other species would soon be found, to which Mr. Day's name could be attached. Mr. Bateman concluded by reminding the meeting that a show of Orchids would be held on the 13th, and he hoped that all who grew Orchids would contribute to its success.

The subjects brought before the Fruit Committee, and the awards of the Floral Committee, having been enumerated by Mr. G. F. Wilson and Rev. Mr. Dix, Mr. Bateman begged to be allowed to say a few words. He understood that there were three bouquets to be ballotted for, and Mr. Wentworth Buller had written that he would send a supply, but from some cause this had not arrived. Whilst speaking of *Vaccinaceæ*, he had omitted to show them the fine large foliage of *Thibaudia macrophylla*, and he had no doubt that the forests of Brazil which had been first ransacked for stove plants, next for Orchids, and then for plants with ornamental foliage, would have to be again explored in search of *Vaccinaceæ*. There was an Orchid, too, which he had omitted to bring under their notice, it was Mr. Skinner's variety of *Epidendrum vitellinum*, from Central America. The flowers of *E. vitellinum* were very suitable for ladies' head dresses, and would last for half a dozen parties, but unfortunately the plants at present in cultivation flowered in autumn and winter, whilst Mr. Skinner's variety flowered in spring, or during the London season, when flowers were more required for the purpose referred to. He had no doubt that Mr. Skinner's plant was the true *Epidendrum vitellinum* of Lindley's "*Sertum Orchidaceum*."

Votes of thanks having been accorded to Mr. Day, and the other exhibitors, and to Mr. Bateman, the latter in returning thanks expressed the great pleasure which he felt at seeing the reviving popularity of the Tuesday shows, and hoped that their success was one among other signs, that the returning tide of prosperity had set in.

Seventeen new Fellows were elected on this occasion.

TO WHAT PLANTS IS HARD WATER PREJUDICIAL?

MR. ROBSON'S letter on "Hard Water and Can it be Remedied" is one of great importance to persons who reside (as in Hants) in a chalky district, especially in so dry a season as the present. I hope his inquiry will elicit from some of your scientific readers a satisfactory remedy. His letter has raised a question with myself, and no doubt many others, all in a like position. I have lately planted *Araucarias*, *Deodars*, *Cedars of Lebanon*, *Evergreen Oaks*, &c., 10 or 12 feet high; for many weeks past we have had but little rain, which necessitated my gardener to give them spring or well water (very hard) by hydropult syringing as well as at their roots, but some of the *Cedars* are dead, and others show failing vitality.

For the good of the many as well as myself will any of your practical readers enumerate what trees, shrubs, &c., hard or chalky water is known to be prejudicial to? Mr. Robson names one class only, the *Heaths*. Probably, as lime water is a bad solvent, it is equally difficult to be absorbed by the leaves of the trees as by their roots.—J. C.H., Andover.

[That hard water is very injurious to a large class of plants there can be but little doubt. Mr. Robson has opened a subject which it is most important should be thoroughly ventilated. In your case, the death of your plants may possibly be attributed to several causes, and it may be that the hard water has had nothing to do with their decay. Indeed, we are strongly inclined to think that it has not. You say that you have lately planted *Araucarias*, *Deodars*, *Cedars of Lebanon*, *Evergreen Oaks*, &c., 10 or 12 feet high. In the first place you must bear in mind what an unfavourable time it has been for newly planted trees for the past six or seven weeks. If the situation in which the trees are planted is very much exposed it would be

scarcely possible to give them sufficient moisture, so that they might retain their vitality, unless some means had been adopted of shading them. As the weather has been you might have syringed them every half-hour overhead, and then found that you could not have kept them moist enough. For the purpose of causing the sap to circulate between the roots and branches in seasons like the present, it is always advisable to stick branches of Spruce or Laurel thickly round newly-planted trees, so that the trees may be protected from the direct rays of the sun. They also help to retain the moisture about the trees for a much longer time after these have been syringed. We remember seeing some years ago a large number of trees of Cedar of Lebanon, Araucaria, Deodar, Evergreen Oak, &c., planted late in the spring in a very similar season to this. They were planted in very elevated positions in the neighbourhood of Dorking, and were constantly watered with nothing but hard water, but similar precautions were taken to those mentioned above with regard to shading, and not a plant was lost. Some of the finest Grapes have been grown in the neighbourhood of Dorking, though the Vines have been watered with nothing but hard water. There is no doubt but that hard water if pumped out of the well and left for several hours exposed to the action of the air would lose a very large portion of its injurious properties. We should, therefore, mainly attribute the loss of your trees to the want of sufficient atmospheric moisture, or there may not have been proper care taken in planting them, they may have travelled a long distance by rail, or delays may have taken place in their transit, so that their roots may have perished before they reached you. All these things should be duly considered before we can arrive at any definite cause of their death.

We have often seen trees planted so carelessly that we are not surprised to hear of their not doing well. Many people will dig a deep hole for them, the tree is placed in the bottom of the hole, care is not taken to spread out the roots, the soil is thrown in carelessly, and the tree is, of course, expected to live. These are two of the rocks on which many split in planting trees. One of the very worst things that can be done is to plant trees deep; the upper or collar roots should be as nearly level with the surface as possible, so that water in any quantity may not lodge about the roots, and a little hillock should be thrown up around the collar of the tree to encourage root-action near the surface. The ripening influence of the sun and air can then have proper effect on the roots, thereby causing the tree to grow less luxuriantly, but helping it the better to mature its growth, and enabling it to withstand severe weather and strong gales of wind, and, if it is a fruit tree, to furnish itself with fruit buds instead of rank wood buds. The next evil to be avoided in planting trees is the cramping and doubling-back of their roots under the bole of the tree, and care should be always taken to have the centre of the hole the highest. When the tree is placed in the hole all the roots should be nicely straightened out, small quantities of fine soil should then be sprinkled amongst them. After the bottom layer of roots has been made fast with soil, which is done by shaking them up with a fork whilst the soil is being thrown about them, they should have a good soaking of water to consolidate the soil about them. This should be carried on until the hole is filled up, taking care that the roots shall be as nearly as possible in the same position after the tree is planted as they were in before it was moved. In giving this explanation of our mode of planting a tree we do not say that your trees were not planted properly, we are only citing instances that have come under our notice, and describing our experience for the benefit of those who may not be acquainted with these important facts.—J. WILLS.]

GRAFTING MELONS.

ALLOW me to point out to your numerous readers a very interesting experiment which may or may not be new, that of grafting Melons on Vegetable Marrow plants, Pumpkins, or, in fact, on any strong-growing sort of Gourd.

The way and the time to do it should be as follows:—Raise from seed some plants of a vigorous-growing sort of

Gourd, and when they have attained a growth of 12 or 15 inches cut off the head about 4 inches above the seed-leaves, then take a young shoot from a Melon plant that is approaching to a fruiting state, graft it on the Gourd in the way that is called herbaceous grafting, the most simple of all modes of grafting, as it is merely cutting off a slice from the graft and ditto from the stock, fitting the surfaces of each accurately, and binding the graft to the stock gently with a piece of worsted. When the operation is completed the grafted stock should be placed under a bell-glass in moist heat or in any confined place till a union has taken place, which ought to be in a few days. They should then be cautiously exposed to the growing atmosphere they require, and cultivated as Melons usually are. One caution I must give, the graft or scion must always be kept above the soil, so that it cannot put forth roots—all its food must come from the stock. The effects of grafting are so remarkable in fruit tree culture that I am inclined to think this simple experiment worth trying.—CUCUMIS MELO.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

BILLBERGIA OLENS (Stinking Billbergia). *Nat. ord.*, Bromeliaceae. *Linn.*, Hexandria Monogynia.—Probably a native of Tropical America. Floral leaves crimson; corolla purple. Only the old decaying flowers emit the stenoh which suggested the specific name.—(*Bot. Mag.*, t. 5502.)

ASTELIA SOLANDERII (Dr. Solander's Astelia). *Nat. ord.*, Liliaceae. *Linn.*, Diocia Hexandria.—Native of New Zealand, where it grows commonly on the trunks of trees. Flowers yellow, in a very crowded panicle.—(*Ibid.*, t. 5503.)

CATTLEYA QUADRICOLOR (Four-coloured Cattleya). *Nat. ord.*, Orchidaceae. *Linn.*, Gynandria Monandria.—Native of the banks of the Rio Magdalena, New Grenada. Lip purple, yellow, white, and lilac.—(*Ibid.*, t. 5504.)

MASDEVALLIA TOVARENSIS (The Tovar Masdevallia). *Nat. ord.*, Orchidaceae. *Linn.*, Gynandria Monandria.—Native of Tovar, in Columbia, at an elevation of several thousand feet. One of the genus that flourishes in a lower temperature than almost any other genus of Orchids. Flowers white, partially tinged with pink.—(*Ibid.*, t. 5505.)

MONOCHETUM DICRANANTHERUM (Dicranantherous Monochetum). *Nat. ord.*, Melastomaceae. *Linn.*, Octandria Monogynia.—Native of the lofty Andes. Flowers pink, "an excessively pretty plant, deserving a place in every warm greenhouse, where it flowers in October."—(*Ibid.*, t. 5506.)

ARISEMA WIGHTII (Dr. Wight's Arisema). *Nat. ord.*, Aroidae. *Linn.*, Monocia Monandria.—Native of Ceylon. Spathe and spadix uniform pale yellowish green.—(*Ibid.*, t. 5507.)

TEA ROSE, Maréchal Niel.—Raised in the south of France. Lemon-coloured.—(*Floral Mag.*, pl. 237.)

HOVEA PUNGENS MAJOR.—Native of Swan River. Flowers purple.—(*Ibid.*, pl. 238.)

VARIEGATED CHEYSANTHEMUM, Sensation. Flowers white, ranunculus-shaped. Leaves margined regularly with yellowish white.—(*Ibid.*, pl. 239.)

VERBENAS.—George Tye, purple with lemon-coloured eye. Charles Turner, French white, with rosy crimson centre. Queen of Pinks, bright pink with yellow eye. All raised by Mr. Perry, and on sale at Mr. Turner's.—(*Ibid.*, t. 239.)

AUCUBA JAPONICA.—Female plant with its ripe fruit. "The reason we have been so long ignorant of the full merit of the *Aucuba japonica* arises out of the fact that the plant is dioecious—producing its stamen-bearing flowers on one plant, and its pistil-bearing flowers on another. All the *Aucubas* we possessed in this country, till quite recently, were of the latter kind, all, doubtless, the progeny of one originally-imported individual: and hence, as we had no fertilising pollen, our poor *Aucuba* blossomed uselessly so far as concerned the production of its ornamental berries. To Mr. Fortune belongs the credit of giving us the first male *Aucuba*; and the spring of 1863 will be famous in the annals of horticulture as that in which English gardeners first saw, through the agency of these male plants of Mr. Fortune's, the first berry-laden bush produced in Europe.

"This plant is that which our plate represents, as grown by Mr. Standish, of the Ascot Nurseries. It also—that is to

say, the green-leaved female Aucuba—is a recent introduction from Japan, and is, no doubt, the typical form of the species, of which our common blotched-leaved Aucuba is one of the many varieties having variegated foliage. Handsome as the spotted Aucubas are, the green-leaved form is still handsomer, on account of the better contrast it presents with the coral-coloured fruit. Mr. Fortune himself observes:—"The green-leaved I look upon as the most valuable of them all. It forms excellent dwarf hedges, and its glossy evergreen foliage is very ornamental, particularly during the spring months, when the rich coral-coloured berries may be seen peeping out from amongst its leaves." Our principal figure represents this plant in fruit, but we are unable to give the true brilliancy of colour, which is that of the finest glossy sealing-wax. In the upper corner of the plate is a small sprig of the blossoms of the male form, which has

wrought such a change in the few plants as yet brought within its influence; and which, when well established and planted out in our gardens and shrubberies, is to work similar changes on the many forms of Aucubas which henceforth—thanks to Messrs. Siebold, Fortune, and Vetch—will adorn them.

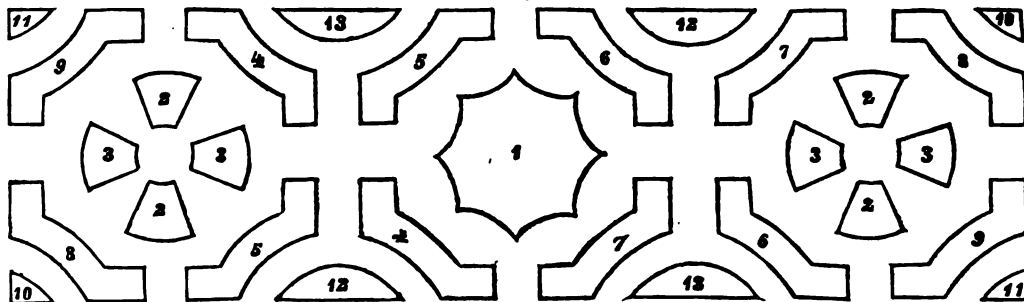
"That the common variety will be equally ornamental so far as the production of berries is concerned, is now sufficiently evident; for it has already been exhibited in a fruiting state by Mr. Laing, of Twickenham, who produced, at the Royal Botanic Society's Show, on the 18th of March in the present year, two or three small bushes with the bunches of glossy scarlet fruit very well developed, in which state, on account of the larger size of the berries, it is decidedly more ornamental than the Holly, and that is sufficiently high praise.—(*Florist and Pomologist*, iii., 65.)

FLOWER-GARDEN PLAN.

I HAVE lately taken charge of quite a new garden, and the enclosed plan, on grass, has fallen to my lot to bed out at the proper season; and I wish to submit two methods of planting for your inspection, and to ask you to tell me which of the two would look the better, and be the more suited to the plan? As I am not very well versed in the arrangement of colours, I trust I shall not be asking too much if you will criticise the two arrangements, and let me know the result in your Journal. I may also add that I shall have to buy every plant, and that the work is entirely left to me.—T. R.

[Of your two proposed modes of planting we prefer the first, where the beds are to be edged. There is nothing wanting to make such a plan complete of its kind, except a centre bed for 2, 2, and 3, 3, on each side. Your proposed plan of planting has, no doubt, for its object making one figure as it were of the whole group. This gives a reason

for your cross-pairing throughout. No doubt such a plan would look well. Perhaps we are wrong, but we think a simpler plan would look better. The very outline gives you a centre and two wings. This is farther made apparent by the proposed mode of planting, where the centre of the two wings, 2, 2, 3, 3, and repeated, are planted to balance. The simpler plan we would propose would be—make a centre and two wings throughout. Thus, for the centre, instead of banding Christine with Stella, we would make Stella, as the strongest-growing, the centre. Then, instead of crossing 4, 4, we would cross as pairs 4 and 6 and 5 and 7. Then for the wings we would cross 5, 9, and 4, 8, 6, 8, and 7, 9. We would also like to edge 2, 2, 3, 3, repeated. We think this would do more justice to the figure, and be more simple. If you should think so, and you proposed planting, we will criticise. Your own plan will look very well, but pass the above through your mind.]



The beds are 4 feet wide, except the central bed, which is 20 feet wide, and 2, 2, 3, 3, which are 8 feet wide; the

whole is surrounded by grass, except at one end, where there is a conservatory.

NO. 1 PLAN OF PROPOSED PLANTING.

- 1, Centre, Christine Geranium; band of Stella; edge, white Verbena.
- 2, 2, Purple King Verbena.
- 3, 3, Manglesi Geranium.
- 4, 4, Baron Hugel Geranium; edge, white Ivy-leaf Geranium.
- 5, 5, Alma Geranium; edge, Robinson's Defiance Verbena.
- 6, 6, Prince of Orange Calceolaria; edge, Ariosto Improved Verbena.
- 7, 7, Rose of England Geranium; edge, yellow Calceolaria.
- 8, 8, Stella Geranium; edge, Alma Geranium.
- 9, 9, Heliotrope John Cattell; edge, Tom Thumb Nasturtium.
- 10, 10, Verbena Lady Cotton Shepherd.
- 11, 11, Géant des Batailles Verbena.
- 12, 12, Cloth of Gold Geranium; edge, Lobelia Paxtoniana.
- 13, 13, Mrs. Pollock Geranium; edge, Lobelia speciosa.

NO. 2 PLAN OF PROPOSED PLANTING.

- 1, Same as No. 1 Plan.
- 2, 2, Same as ditto.
- 3, 3, Same as ditto.
- 4, 4, Géant des Batailles Verbena.
- 5, 5, Yellow Calceolaria.
- 6, 6, Verbena Ariosto Improved.
- 7, 7, Prince of Orange Calceolaria.
- 8, 8, Stella Geranium.
- 9, 9, Rose of England Geranium.
- 10, 10, Alma Geranium.
- 11, 11, Golden Chain Geranium.
- 12, 12, Cloth of Gold Geranium, mixed with Lobelia Paxtoniana.
- 13, 13, Mrs. Pollock Geranium, mixed with Lobelia speciosa.

ON THE CULTURE AND CROSS-BREEDING OF STRAWBERRIES.

I STATED in an article at page 233 that if plants of La Constante Strawberry had been anywhere found to suffer from scorching it was to be attributed either to want of attention to timely and effectual watering in dry soil, or to planting or transplanting without having previously re-

"G. S." asks if the latter precept is correct. No one having replied Mr. Radclyffe thinks it incumbent on me to do so, as I was the author of the proposition; and as some explanation on this point may be useful to other cultivators as well as "G. S." I gladly undertake to answer his inquiry.

Grow six Strawberry plants in pots for six months or more,

and plant them out without removing the ball of earth and disentangling the roots, which will be matted round the inside of the pots; then take up with the spade other six plants, leaving the earth more or less compact about the roots, and plant both sets of six in the same bed or quarter of the garden in which you plant a dozen Strawberries, the roots of which have been disencumbered of the smallest particle of soil, but which have been spread out in an oblique direction at planting. The latter twelve plants will soon acquire a great degree of vigour, whilst, on the other hand, the other twelve will most likely have a quite different appearance. Whether this planting out or replanting be done in autumn or spring, a month or two afterwards dig up the whole plantation, and it will be found that the plants whose roots were freed of earth will have fibrils and spongioles in abundance, that the adventitious roots from the collar will have insured the re-establishment of the plants, and that these will be in a condition favourable to their withstanding summer's drought and winter's frost. Examine, on the other hand, the plants turned out of pots, or taken up out of the ground, and even after they have been planted six months it will be found that they are not so well established as the others. The difference between the two modes of treatment will, on consideration, be readily understood, and it will be found that Strawberries not properly planted will not resist heat and cold so well as those differently treated. Any Strawberry-grower may make the experiment himself, and report the result, and in less than a year "G. S." could ascertain whether I am right or not in what I advance.

Before concluding I am induced to say a few words on another question, which has been from time to time canvassed in the pages of this Journal and elsewhere—namely, the artificial fertilisation of the Strawberry. For thirty years I have been acquainted with this theory and have carefully practised it, but never with satisfactory results. With regard to one variety making a better mother than another, before plunging into a sea of suppositions it would be far better to examine closely the constitution of the variety, and its botanical character. Does the variety intended to produce seed exhibit at the time the requisite degree of perfection? Is it sufficiently hardy in all seasons? Is the growth firm and moderate? Is the fruit of good quality, smooth-fleshed, produced in long succession, and long-keeping? Has the variety been tried in all ordinary situations and in the different climates of the temperate parts of the globe? Has it been grown for ten years? and has a sufficient amount of evidence been collected on the above points to form a judgment in conformity with the most severe standard of perfection recognised in this branch of culture? When a variety is found to possess all these qualities, that is the variety to save seed from with the view of obtaining an improved variety. It must not, however, be forgotten that perfect seed can only be obtained from healthy adult plants carefully cultivated, and under no extraordinary conditions as regards situation.

When I hear of any one having artificially fertilised a flower of any hermaphrodite Strawberry I doubt the truth of the statement. Let any one examine the flower of the Strawberry before the corolla opens, and on raising the petals he will find that the anthers covering the stigma of the pistil spring from the pits in the forming receptacle. By the time the corolla has opened fertilisation has taken place. On examining with a magnifying glass the orifice of the withered stigma it will be found that the ovary is closed, and that natural fecundation has been already effected. It is then impossible to introduce the pollen of another variety.

There is yet another principle which is pretty generally admitted by those best acquainted with the subject. It is this—The more a variety of fruit, after successive deviations, differs from its primitive type, and the further it is removed from the place of its origin and the conditions of climate which it there enjoyed, the greater is its inclination to vary still further when raised from the seed carefully selected. Placing more reliance on this principle than on the new system of artificial fertilisation, I saved the seed of a dozen plants of *La Constante*, carefully cultivated, and in a situation where it was impossible that the flowers could be impregnated by the pollen of any other variety, and the result was very convincing as to the soundness of the above principle. From these seeds were raised the new varieties

Lucas, La Fertile, Souvenir, Hero, Model, Bijou, &c., all of them differing from each other. This tends to prove that the improvement by seminal variation arises from a combination of circumstances quite distinct from artificial fecundation, and such is my conviction based on a series of facts observed by myself. If any one does not agree with me on this point, I would advise him to experiment for himself, and draw his conclusions from facts actually observed.—J. DE JONGHE, 9, Rue Coenraets, Saint-Gilles, Brussels.

SOIL FOR RHODODENDRONS.

IN No. 206 of THE JOURNAL OF HORTICULTURE I find attention is drawn to this subject. Having a considerable extent (upwards of fifty acres), of the hardy kinds of Rhododendrons under my charge, and in very different soils, I can fully corroborate all Mr. Robson says with regard to the diversity of soils they will grow in. With regard to the sawdust, I can assure Mr. Robson that that is not the cause of failure, even though it contains that from resinous trees, for we have young seedlings growing in soil freely mixed with it.

Many of the hybrid Rhododendrons, I fear, are far too tender, except in very sheltered places; at least, I find them so here. I obtained a lot from an eminent firm in England, and was assured they were perfectly hardy. I planted them by the side of common kinds, but they would not do; they scarcely kept alive, though the soil was all that could be wished. I removed them to another spot, and they are doing well, but many of them open too early, and are spoiled by late spring frosts. As they are now planted they are surrounded by common kinds that do well, so that there can be no difference as to soil and situation, and the very common Rhododendrons will not succeed well unless they are sheltered considerably from the prevailing winds, especially in spring.

The nature of the soil under Rhododendrons is here very variable, and the most numerous and best seedlings for transplanting are on a gravelly loam, and in the shade. There might be more seedlings at the mountain glens but for the Heath and Moss; where they do take is chiefly by the side of drains.

In my humble opinion the three essentials for the successful growth of the Rhododendron are shelter, shade, and moisture while growing, with a spongy black turf freely mixed with sandy gravel, and not too deep—not exceeding 2 feet. Never plant in what is termed a soapy turf; and when mountain turf is scarce, a good mixture of leaf mould may be used with the turf of a sandy loam pasture cut an inch thick, and laid by until it is half rotten, using sand and gravel freely.

In removing Rhododendrons I have used, with good success, mosses wrapped around each plant, and left on when planted; the ball being kept moist the roots soon pass into the moss, and when once started they endure the presence of unsuitable substances much better. Be sure to give a good soaking at planting and again in a week or so, if the weather should set in dry.—GEORGE BECKETT, *Shanbally, Clogheen, Ireland*.

FRENCH ASPARAGUS.

REFERRING to the correspondence in your Journal lately, "English versus French Asparagus," I requested L'Hérault, of Argenteuil, to send me a bundle, which I have received this day. Thirty-six heads weigh 10½ lbs. I send you herewith ten heads, and shall be glad if you will cook and eat them this day, and decide the question, whether all that is not green is as "tough as the roots of an old Elm tree," as our friend Mr. George Abbey asserted.—H. S. WATSON, *The Cottage, Old Charlton*.

[We obeyed our correspondent's injunction. The ten heads were 9 inches long, 4 inches in circumference in their largest part, and weighed rather over 2½ lbs. Their upper 3 inches were perfectly tender, and the interior of the remaining 6 inches was scarcely less so, but the flavour of the top 3 inches was much weaker than that of our well-grown full-coloured Asparagus.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

The hoe should be employed vigorously in eradicating weeds and loosening the soil about young plants where it is hardened by the sun. *Basil* and *Marjoram*, if forwarded in pots, or boxes, may be transplanted on a rich border after a shower of rain. *Beans*, make another sowing of Long-pod, Green Windsor, or any other approved sort. Earth-up the early crops, but if the weather continue dry give them a good watering previous to doing so. *Broccoli*, the seed-beds should be frequently sprinkled with soot, wood ashes, or dust of some kind to preserve the young plants from what is commonly called the fly. The young seedlings sometimes disappear without any apparent cause, but if they were examined about 10 o'clock at night with a lighted candle, the slugs then visible would remove all doubts as to the cause; to destroy them, sprinkle them with quicklime. *Carrots*, thin and water those required for early use. If the first main crops have failed, sow seed of the Early Horn immediately. *Cucumbers*, when the linings of the beds are renewed care must be taken that the heat is not great immediately round the sides of the frame; as a large portion of the roots of the plants will be formed there, water should be given more frequently there than at any other part of the bed. As soon as the ridges are ready for the plants, these may be planted out beneath the hand-glasses, they will require to be covered with mats during the night. *Parsley*, thin the early sowing as soon as it is up. Select some old plants for seed. *Peas*, earth-up and stick the advancing crops, but before doing so they should be watered if the soil is dry. Make another sowing. *Scarlet Runners*, make a sowing in the open ground to succeed those that may have been forwarded in boxes, and which will be ready to plant out about the end of the week. *Tomatoes*, if the plants were raised at the time recommended, they will now be strong and fit to plant out in the end of the week, to be planted singly, and kept well watered until they obtain roothold. *Turnips*, thin the advancing crops and make another sowing of the Stone to come in in July and August. Where any main crops have failed, no time should be lost in getting in more seed; if the soil is moderately moistened by rain so much the better for sowing the seed, but do not wait for it, for if the seed is sown when the ground is dry and warm, the first shower will be of more service to it than if sown after it.

FRUIT GARDEN.

Wall trees now require especial attention. Disbudding should be performed at an early stage of growth, and continued at intervals during their season of active growth. Inspect all grafts, removing wild shoots and insects.

FLOWER GARDEN.

We shall suppose that all the bedding-out plants are in a fine healthy state, the next consideration will then be the arrangement of the colours in the beds, and that arrangement must be left to the taste of the planter, who, if attention has been given to the subject so frequently adverted to in the pages of THE JOURNAL OF HORTICULTURE, will be the best judge of the sins of omission, or commission, on former occasions. As showery weather generally occurs about the middle of the month, advantage should be taken of it to plant the bedding-out stock, beginning with the hardier kinds—such as *Calceolarias*, *Verbenas*, *Scarlet Geraniums*, &c., leaving *Heliotropes*, *Petunias*, *Anagallis*, *Nierembergia*, and such plants as are more susceptible of injury from even slight frosts, until the latter part of the month. All shoots which are long and that are likely to be injured by being blown about by the wind should be pegged down and some small branches stuck amongst the plants to shade them from bright sunshine, and protect them in some degree from the effects of such slight frosts as may occur at this time. Many of the coniferous trees of modern introduction are well worthy of a place on the lawn or in pleasure grounds. If it were in contemplation to add such a noble feature to the home grounds, we would advise, from some experience on the subject, this as the most favourable season for planting them on slightly raised mounds of loamy soil, and to water and stake after planting. The leading shoot of the *Deodar Cedar*, and other naturally drooping shoots, should be allowed free play, for if tied-up straight they are apt to die, and to be potted immediately after their

flowering season. Good turfy loam well rotted, mixed with one-fourth leaf or vegetable mould, one-fourth rotten dung, a small portion of river sand, and a little bone dust if it can be procured, are all the ingredients necessary to grow them to the greatest perfection. Such as are intended to produce seed must not be potted until the seed is gathered.

GREENHOUSE AND CONSERVATORY.

It will be well to bear in mind during the summer that the shape and sturdiness of every plant will depend in a great measure upon frequent attention to pinching out the point of every strong-growing shoot before it gets too long. A liberal supply of clear liquid manure to be given occasionally—that is, about once or twice a-week, according to the state of the weather or the healthy or luxuriant growth of the plants. Plants in a sickly state, or such as have been recently potted, will not require it; indeed, to such it would be positive injury. *Cinerarias* should receive plenty of air to keep the plants in a healthy state without drawing the foliage; green fly must be kept down by tobacco smoke. The Chinese *Azaleas* going out of bloom should have the seed-vessels picked off, and such as require more pot-room to be shifted, using rich fibry peat with a good sprinkling of silver sand. The *Epacris* that are done blooming, and are now commencing their growth, should be potted; they delight in heath soil like the Indian *Azaleas*. The young stock of hardwooded plants should be growing freely, and will now require careful attention to supply them with a warm and moist atmosphere, with sufficient air at favourable opportunities to secure short-jointed and compact growth. *Balsams* to be frequently shifted into larger-sized pots, and placed in a gentle bottom heat near the glass with sufficient air to prevent them from being drawn.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

VERY much the same as last week—ground-stirring, weed-killing, Pea and Bean sowing, and watering where absolutely necessary, as in the case of two successions of Cauliflower. After watering the first lot turned out, removed the Laurel twigs which surrounded them, forked over the ground which had become a little hard, and then threw all over the ground, as the forking proceeded, a little half-rotten stubble and litter which had been used for protection in winter. This will secure the plants from the drought, and a little nutriment will be washed out of it if we have a good rain, as the clouds, the dust, the wind, and a falling barometer seem to indicate.

Mulching.—Much of the usefulness of mulching depends on the time it is used. For tender and newly-planted trees in winter it is useful for keeping frost and extreme cold from the roots. In spring it is also useful at night for the same purpose, but it acts injuriously in proportion to its openness during fine days in keeping the heat of the sun out of the ground. If kept on during summer it prevents the ground being sufficiently heated, and a clammy, unhealthy, marshy state of the soil is apt to be the consequence. Mulching, then, applied in winter should be moved in warm days in spring. Even scarce as we have been of water in summer we should derive little benefit from mulching before the soil was sufficiently warmed to grow healthily the plants committed to it. We mulch these Cauliflowers because the soil is now warm enough for them. If the rain, notwithstanding the prognostics, do not come, we will mulch about Peas, Beans, and, if possible, Cabbage, Asparagus, &c., with short grass from the mowings of the lawn. It is a mistake, however, to use any such mulching too thick, or, as said above, too soon. Thus in a continuous dry season in the flower garden we would, if we could, mulch *Calceolarias* a month or six weeks before we should think of thus helping *Scarlet Geraniums*. The *Calceolarias*, from being denizens of the hill sides of Chili and Peru, will often have their roots refreshed by the liquid from melted snow, whilst their tops are exposed to a fierce unshaded sun. A cool bottom and a bright warm atmosphere above them just suit the *Calceolaria*, whilst with a moderate supply of moisture at the roots the soil can never be too warm for *Scarlet Geraniums*. Ours were never better than last season.

though for three months they scarcely received water in any form.

Even in cases of mulching in summer to keep the soil moist after it is warm enough, the mulching should never be so thick as to prevent the soil being easily broken by the hoe or fork, as anything like a caked surface would prevent the free action of the atmosphere. Some failures with mulching last season, with an account of which we were privileged, we have no doubt were owing to two causes—mulching too soon and mulching too deeply. One enthusiast covered the surface of the ground so thickly with cocoa-nut refuse in the middle of May that the ground was like Greenland in August. Another used a good coating of half-decomposed hotbed manure, some 6 inches thick, for Broad Beans and Dwarf Kidney Beans in the middle of June, and the garden Beans did tolerably well, whilst the Dwarf Kidney Beans thus coddled became sickly, and did not do half so well. The want of heat in the soil and keeping heat out was the cause of the failure. An inch or two would have been better than such a dressing.

Another friend writes, and wishes to know why we do not say a good word for cocoa-nut refuse for mulching, especially in hot dry summers. We have not done so, not because we undervalue the material, but because we have used it but little out of doors, and are old-fashioned enough to believe in just a moiety of the wonders it is said to accomplish. If he would send us a ton or two for larger experiments we might be induced to change our opinions. We must say, however, that some correspondents proved its admirable adaptation last summer for keeping their flower and other beds moist with little or no watering. They did not put it on too early, and the thickest we were told of was only from 1½ to 2 inches.

Sowed Gherkins, Vegetable Marrow, &c., as we prefer the plants should go out without being stunted. Potted Chilis, Tomatoes, &c. Pricked up the surface soil in Cucumbers-beds; made more beds for frames, as detailed the other week. Thinned-out Carrots and Turnips in frames, and exposed Potatoes that had been covered with glass to the sun and air during the day, giving them still a little protection at night. Earthed-up some of the most forward Potatoes in the open garden, and in some frosty mornings scattered a little litter over the tops, which kept them all right.

FRUIT GARDEN.

Did a little shortening, nipping, and fastening out of doors, as we have been rather behind this season. Thinned and shortened shoots in orchard-house. Tied-in shoots in Peach-house. Regulated in Fig-pit. Thinned Grapes at all convenient opportunities. Planted-out more Melons, and removed exhausted Strawberry plants, and replaced with fresh. Potted about a hundred young plants, in case we should run out, and plunged them out of doors in a bed of leaves that will yield a nice regular bottom heat. In about three weeks we expect the pots will be full of fresh roots, and then, if the end of May and the beginning of June should be dull and cold, we may make sure of a continuous supply before we have plenty out of doors. In potting these we used rather stiff loam, and rammed it firmly about the roots with a round blunt-ended stick. Not to speak of very early Strawberries, a good supply in April and May is always very creditable to the gardener. Grapes should be thinned with clean dry hands and a covered head. If the hands are naturally clammy it is best to hold the bunch in position with a small pointed stick, and not to touch it. The operator may be certain he does not touch a bunch with his head, whilst the on-looker is horrified at seeing the bunches driven about as if tossed from side to side with a broom.

ORNAMENTAL DEPARTMENT.

For general matters see previous weeks' notices and Mr. Keane's directions. Our chief work out of doors has been rolling, digging, planting hardy plants, Gladiolus, &c., and mowing where most wanted, the weather being very unsuitable for the scythe, as we have scarcely had any dew for a week. Prepared beds for bedding-out plants, but we shall be in no hurry with these, as they are growing where they are, and a few things exposed were injured by the late frosts. We think success is more to be secured by well preparing the ground than by too early planting.

Watered some trees and shrubs that were lately planted,

and syringed the tops in hot days. The duller weather will give them a great advantage, as the bright sun was rather trying for them. Mere deluging at the roots with cold water does little good, or rather harm. A syringing of the tops and a little shading would often be more effectual.

Calceolarias.—Ours this season are later than usual, and, the cause of which we cannot explain, are lighter in colour than usual, though they have never had an insect on them, and the roots have been all right. They were shut up a long time in winter, and perhaps they may have had too bright sun when exposed. Even now, though greatly improved in the earth pits where they are growing, there are a number of plants not quite so green as we wish to see them, but they seem rooting into nice balls.

Potting.—A great deal has been done with the later bedding plants, and also with ornamental-foliaged plants, as Begonias, Coleus, Hydrangea variegata, for the conservatory in the warm months; and as soon as possible we shall overhaul Ferns, &c., in pots. Meanwhile we shall conclude with three notes to oblige inquirers.

1. *A slight hotbed in which at once to insert cuttings of bedding plants*.—The depth of the bed should be proportioned to the time of the spring. This is how our last was made. One foot of long litter mixed with some horse-droppings, so as to raise a little heat, 9 inches of rather warm tree leaves, all trodden, then 2 inches of rotten tree leaves beaten level, then from 2 to 3 inches of sandy loam, and a little leaf mould passed through a half-inch sieve, the riddings being placed over the rough leaf mould. This sandy soil was beaten gently and watered with warm water, and when set on the surface from a quarter to a half inch of road-drift sand was placed over it, and Verbena and other cuttings were dibbled in at about 2 inches apart. In from a fortnight to three weeks they were all struck, and when properly hardened by giving more and more air and then removing the glass altogether, the plants will rise with nice little balls, the rootlets keeping fast hold of the leaf mould at bottom.

2. *Balsams*.—"Many of these after I have grown them to a large size come single. I have but little room. I should like to have only good double ones." Prove them thus before you grow them so large: Pot off all your seedlings in three or four-inch pots. Keep them in these pots, giving them, when the pot is full of roots, a little manure water until they show a bloom or two. Set aside all those that show single flowers, throwing them away, or plant them out of doors; take all the flower-buds off the double ones, give them successional potting, and grow as large as you like, and when you let them bloom you will be sure to have flowers like the first specimens.

3. *Cockscombs*.—"After careful culture many combs are not regular in their growth." To have only good ones in large pots, proceed much the same as with Balsams. Either prick out the Cockscombs 2 or 3 inches apart in shallow pans, or pot them separately in three-inch pots. Keep them in either case until the combs show. If only half an inch in size, you will be able to judge at once of what their shape will be. Then carefully select those with well-shapen combs, shift and reshift and grow on, giving them bottom heat and plenty of top heat and air, until the combs are about large enough to please you. Hardly a comb will disappoint you if you thus start fair. We think they may be had larger by continuous growing without this check at first, but you cannot be so sure of the quality.—R. F.

BIRMINGHAM ROSE SHOW.—This great Midland Exhibition of the "queen of flowers" is fixed to take place on Thursday and Friday, July 6th and 7th. Several new features are included in it.

TO HORTICULTURISTS.—The fruits of breaking a pane of glass are mostly currents of air.

TRADE CATALOGUE RECEIVED.

B. S. Williams, Paradise and Victoria Nurseries, Holloway, London.—*Spring Catalogue of New, Choice, and Rare Plants.*

COVENT GARDEN MARKET.—MAY 6.

The general supply is good. Pines and Grapes are more plentiful, and forced Strawberries are sent in in large quantities. Pears may now be said to be over, though a few are still to be had. Green Gooseberries have made their appearance in quantity, and are bringing 4s. per gallon. For Lettuces and other saladsthere is a brisk demand. Cos Lettuces commanding a ready sale at 1s. 6d. per score. The Potato market is still well supplied. New Potatoes from Lisbon are sold at from 3d. to 6d. per lb. English frame Potatoes, at from 1s. 6d. to 2s. the pound.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	3	0	4	0	Mulberries....	punnet	0	0	0
Apricots.....	0	0	0	0	Nectarines.....	doz.	0	0	0
Cherries.....	0	0	0	0	Oranges.....	100	6	0	14
Chestnuts.....	bush.	14	0	20	Peaches.....	doz.	36	0	45
Filberts.....	100 lbs.	40	0	0	Pears (kitchen)...	bush.	8	0	12
Cobs.....	do.	50	0	60	dessert.....	doz.	3	0	10
Gooseberries...	½ sieve	0	0	0	Pine Apples.....	lb.	6	0	12
Grapes.....	lb.	10	0	15	Plums.....	½ sieve	0	0	0
Lemons.....	100	5	0	10	Strawberries.....	os.	0	6	1
Melons.....	each	0	0	0	Walnuts.....	bush.	14	0	20

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	each	0	4	0 to 6	Leeks.....	bunch	0	3	0 to 6
Asparagus.....	bundle	2	0	6	Lettuce.....	per score	1	6	2
Beans Broad.....	½ sieve	0	0	0	Mushrooms.....	pottle	1	0	2
Kidney.....	100	1	6	2	Musd. & Cress, punnet	0	2	0	0
Beet, Red.....	doz.	3	0	4	Onions.....	bushel	5	0	7
Broccoli.....	bundle	1	0	2	pickling.....	quart	0	6	0
Brussels Sprouts...	½ sieve	0	0	0	Parsley.....	½ sieve	1	0	1
Cabbage.....	doz.	1	6	2	Parsnips.....	doz.	0	9	1
Capecous.....	100	0	0	0	Peas.....	quart	7	6	0
Carrots.....	bunch	0	7	0 to 10	Potatoes.....	bushel	2	6	4
Cauliflower.....	doz.	2	0	6	Radishes doz. bunches	0	6	1	0
Celery.....	bundle	2	0	3	Rhubarb.....	bundle	0	3	0
Cucumbers.....	each	0	6	1 to 6	Savoy.....	doz.	0	0	0
Endive.....	score	2	6	3	Sea-kale.....	basket	1	0	2
Fennel.....	bunch	0	3	0	Spinach.....	bushel	1	0	2
Garlic and Shallots, lb.	0	8	0	0	Tomatoes.....	½ sieve	0	0	0
Herbs.....	bunch	0	3	0	Turnips.....	bunch	0	3	0
Horseradish... bundle	2	6	4	0	Vegetable Marrows doz.	0	0	0	0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

ROSE LEAVES (*A Lady Subscriber*).—One of the leaves has been eaten by some one of the leaf-mining grubs. There is no remedy for this but picking off and crushing the leaves attacked. The other leaves exhibit symptoms of starvation. Liquid manure, given twice a-week, and mulching over the roots, would soon remove those symptoms.

CAPE WATTLE (*F.*).—"Wattle" is the Australian name for any *Acacia*, but which is the "Cape Wattle" we do not know. Having no information as to the culture adopted by you, we cannot advise.

ORCHIDS (*X. of P.*).—Your specimen is *Oncidium luridum* var. *guttatum*. The tint of the green of the buds of *Phalaenopsis* vary in colour, but we never saw them absolutely yellow.

RHODODENDRON SEEDLING (*C. E.*).—There are many better in the same style, but to form a definite judgment the plant must be seen. Send it to the Floral Committee of the Royal Horticultural Society.

GUANO LIQUID MANURE (*Woodbank*).—Two ounces of guano to each gallon of water will make a liquid manure quite strong enough for Roses, &c.

MANAGEMENT OF BULBS (*Emily Cook*).—We think you will gain all the information you require for the present by applying to Messrs. E. G. Henderson & Son, of the Wellington Nursery, St. John's Wood, for a copy of their "Bulb Guide." It was published in 1880. Its only fault is its being too concise. We quite agree with you in thinking that a work similar to the one you have described would be very useful to many lovers of bulbs, but it would take a considerable time in framing. We hope, however, to produce a work of this description at some future time. There is a series of essays on bulbs and their culture, by the late Mr. Beaton, in one of our earlier volumes.

MOWING MACHINE (*M. H.*).—We know one called "Boyd's;" but we cannot give or publish any opinions as to relative merits. That which you mention is now antiquated; there have been great improvements since that type of machine.

BEETLE DESTROYING PEA PLANTS (*A Subscriber, Reasley*).—You must endeavour to render the Pea leaves as nauseous as possible to the Pea Weevil (*Sitona lineata*), by dusting them repeatedly with soot or lime. Increasing the rapid growth of the plants by liquid manure would help to save the crop. The long dry weather has been very favourable to these insects, but rain will greatly thin their numbers.—W.

WATER CRESS CULTURE (*Cress*).—As you can have a gentle current of water through the bed every day for a few hours, you will be able to grow Water Cresses as they do in Herts and elsewhere to supply the London market. The trenches in which they are grown are so prepared that, as nearly as possible, a regular depth of 3 or 4 inches can be kept up; and when to be planted the bottom is made quite firm, and slightly sloping, so that the water which flows in at one end may run out at the other. If the bottom of the trench is not sufficiently moist, a small body of water is allowed to enter to soften it. The Cresses are then divided into small sets or cuttings, with roots attached to them; and these are placed at the distance of 3 or 4 inches from each other. At the end of five or six days a slight dressing of well-decomposed cowdung is spread over all the plants, and this is pressed down by means of a heavy board, to which a long handle is obliquely fixed. The water is then raised to the depth of 2 or 3 inches, and never higher. Each trench is thus replanted annually, and furnishes twelve crops during the season. In the summer the Cresses are gathered every fifteen or twenty days, but less frequently during winter. Care is taken that at each gathering at least a third part of the bed is left untouched, so that neither the roots may be exhausted, nor the succeeding gathering delayed. After every cutting a little decayed cowdung is spread over the naked plants, and this is beaten down by means of the rammer above mentioned. After the Water Cresses have been thus treated for a twelve-month, the manure forms a tolerably thick layer at the bottom of the trench, and tends to raise its level. To restore it to its original level, all the refuse should be thrown out.

VEGETABLE MARROW (*T. Gillard*).—Look at p. 31 of our "Kitchen Gardening for the Many," as you say you have our Manuals.

COVENT GARDEN MARKET PRICES (*D. P. J.*).—Our quotations are the wholesale and retail prices, and we should think, considering the uncertainty of sale, and the perishable nature of fruits, that the retailer could not give more than half these prices to the growers.

RESTORING A WATERPROOF TARPAVING (*W.*).—If the tarpaving has been painted, it would be better to paint it again. The best paint is yellow ochre and linseed oil, for it does not crack and become so hard as lead colours. Most varnishes, gums, and mixtures of resin, and similar substances, though waterproof at first, invariably crack and let the wet through.

BEATON'S GOOD GRACIOUS POLYANTHUS (*W. W.*).—Messrs. Henderson, Wellington Road, St. John's Wood, bought the stock.

CATERPILLARS ON APPLE TREES (*H. H. P.*).—We remember that the late Mr. Curtis, of Glaxen Wood, Essex, when his orchard Apple trees were infested by caterpillars, had them dusted thoroughly with the powder of slacked lime. He had a large tin vessel, like the rose of a large watering-pot, perforated with small holes at the top and sides, and with a socket to fit on to a long pole. Only a little lime was put into the vessel at a time, otherwise it was not given out freely. Applied early in the morning, whilst the dew was on the leaves, it adhered readily, and Mr. Curtis told us that it was effectual.

CUTTING DOWN AN OLD YEW HEDGE (*E. E.*).—Perhaps it would be best to cut out two-thirds or more of the stems of your Yew hedge, and slash or lay the others in the same way as Thorn hedges are done, adding, at the same time, some manure to the roots. This would at least fill up the gaps and vacancies, and, a portion of the green being left, the plants would grow away again. We never like to cut any evergreen down entirely, without leaving some foliage, and Yew is no exception to the rule. We hope the situation is dry, and if stony and porous so much the better.

SEEDLING WHITE CURRANTS (*C. Ellis*).—It is possible, but not probable, that you may obtain a better variety of White Currant a nongest the seedlings which, we presume, are self-sown, and have come up amongst your trees; at the same time you may have many very indifferent ones. They will bear removal in moist weather, and might be planted in rows 18 inches apart, and the plants half that distance in the row. It is possible some of the strongest may make a shoot strong enough to bear next year, but the greatest number will require another season's growth.

CUTTING THE SHOOTS OF PINUS EXCELSA (*Idem*).—Unless the tree is very irregular in growth, we would hardly advise much cutting to be done, as we certainly prefer a little extra growth on one or two sides to a clipped-looking specimen. If, however, any of the side branches point upwards, as if disposed to compete with the proper leader, the tips of these might be cut off at once; or, what is better, as we sometimes treat Thuja, and similar plants, bend the shoots downwards, and secure them in that position with a string.

PRUNING APPLE TREES LATE IN THE SPRING (*P. Ball*).—It would certainly have been better had you pruned your young Apple trees before they commenced growing, but you may do so yet to a limited degree, so as to give them the shape you wish them to take; but if your trees were only planted in the past winter, it is quite as well to let them alone for the first year, and next winter to prune in rather severely. It is considered bad practice to closely prune-in a young tree newly planted, as it tends to encourage suckers from the stock; but an old tree, with its roots necessarily much reduced by transplanting, may have its head cut-in in proportion. If, therefore, your trees are young, you had better let them alone for the present summer, and cut-in as you like when the leaves have fallen in autumn.

BOOK (*G. E.*).—The book required is called "Arbres Fruitières" par M. A. Dubreuil (5th edition), at Victor Masson & Sons, Place de l'École de Médecine, Paris. Price about 3s. in London.

NAMES OF PLANTS (*J. McG.*).—1, *Asplenium viride*; 2, *Blechnum occidentale*; 3 and 17, var. of *Asplenium bulbiferum*; 4, 10, 13, *Lastrea Filix-mas*; 6, 7, *Lastrea dilatata collina*; 11, *Athyrium Filix-femina rhombicum*; 14, *Asplenium adiantum-nigrum*; 16, 19, *Pteris fastata macrophylla*; 15, *Blechnum pectinatum*; 18, *Pteris hastata*; 20, *Cyrtomium falcatum*; 21, *Polystichum aculeatum lobatum*; 8, *Lastrea aculea*; 5, 9, 12, very imperfect. The Grape was smashed. The roots of the Vine are probably too cold. (*A. E.*).—*Lonicera alipgona*. (*T. Edwards*).—1, *Amygdalus nana*; 2, *Anemone spennina*; 3, *Corydalis lutea*; 6, *Epimedium alpinum*. Nos. 4 and 5 cannot be satisfactorily named from such scraps. They are most likely 4, *Epimedium violaceum*, and, 5, *E. macranthum*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending May 6th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun. 30	29.985	29.975	56	23	54	53	N.E.	.00	Light clouds and fine; cold N.E. wind; sharp frost towards
Mon. 1	29.950	29.924	61	38	53	52	E.	.06	Overcast; cloudy; fine; rain at night. [morning.]
Tues. 2	29.970	29.940	67	36	53½	51	S.W.	.00	Cloudy; fine; windy; dry air, and fine.
Wed. 3	29.972	29.846	70	47	53	52	S.W.	.04	Very fine, with clouds; rain at night.
Thurs. 4	29.848	29.782	68	50	54½	52	S.	.18	Overcast; rain; showery, mild at night.
Fri. 5	29.743	29.650	74	42	55	52½	S.	.04	Very fine throughout.
Sun. 6	30.004	29.927	71	29	56	53	W.	.01	Very fine; low white cloud, and deep blue sky in intervals; [very fine; slight frost at night.]
Mean	29.924	29.863	66.71	37.85	54.14	52.21	.....	0.35	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

APPRECIATING CHICKENS' MERITS.

It is among the great charms of our pursuit that it brings us in contact with many very amiable and excellent men—members of the clergy. We were lately talking to one who said he has certain sermons he always preaches at certain times of the year, and when some of his hearers tell him the sermon is an old acquaintance he asks them if they have acted up to its requirements, or if they have derived all possible benefit from it. We are somewhat in a similar position: there are subjects that belong to seasons, and this is one of them. Letters come in upon us, asking how soon an accurate judgment may be formed as to the merits of chickens, and suggesting the obligation that would be conferred by us on amateurs if we published some papers on the subject. We have done so every year and we do so again.

It is of no use to look for perfection, and if all faulty chickens are to be drafted you may make a clean sweep, but there are deformities and deficiencies that say plainly the subjects of them are fit only for the market and table. Have no mercy upon them. That which is sickly or deformed always seems to have a claim on the sympathy of those who are in a position to protect it, and the crooked chicken, or the poor little darling of the brood, are sure to have protectors among the ladies of the family. We have known a crooked tail to save the life of a chicken, and the greatest favourite we ever saw was one that had a habit of carrying its head as though it were continually looking round a corner. It is useless to save such animals. Chickens sell well at this time of the year—fatten them and send them to market, or, if you prefer, eat them. Nothing is nicer than a spring chicken. It is of no earthly use to suppose they will die. Such creatures seem to be endowed with longevity. Bats won't kill them; if there is an incursion of these pests into the poultry-house they always take the best. Thieves won't steal them—in fact the only use these poor "creturs" can be is to prove a robbery. They form a link in evidence. It is hard to swear to a fowl picked and trussed with the head cut off, but easy when there is a particular foot, or a crossed bill, or a crooked tail. The pest of the neighbourhood in a lonely parish was brought to justice by one of these "cripples." He was the planner of all the most robberies, and the receiver of the goods. His instructions were never to bring away a pet or a cripple, but they did once; they brought away a screaming, flying, very rump-backed Hamburg hen. Every one knows how they scream. She was taken with a lot of choice Dorkings that were in the house. The receiver broke out into a passion when he saw her, and while abusing the thieves and trying to kill her let her get away. She became a second edition of Bill Sykes's dog in more senses than one; she was a means of conviction and recognition, and she would neither be caught nor killed. No amount of food would tempt her down, but, like a feathered Cassandra, she sat on high and prophesied woe, which most assuredly came. Through her he man was taken, and is now enjoying penal servitude. The thief and the receiver were leaving the dock, the latter soothed his wounded spirit by saying, "This comes of people saving pets."

Four-toed Dorkings, five-toed Hamburgs, crooked-combed

Cochins, eccentric chickens of every kind should now pass into food or market. "Well, but," says one, "they are such little things." Granted. Then it becomes a matter of calculation whether they will pay for the food they consume. If that is not likely, eat them. "But they are so small," then make four do the duty of two. Eschew the curse of ordinary English cookery, the plain roast and boil, and make what some people call "a mess." Many who, in what we Hampshire people call "pig-killing time," when like "Romford Facey," "we live well," can enter into the merits of "liver and crow," or fried "griskin," or "lean meats," at other times eat veal and bacon, and never dream of frying these little chickens. They hate cookery. Well, let us teach them a little of it. It is of no use to try to fry them whole. Let them form part of a dish; but how to cut them up, they are all joints and bones. A very clever writer on cookery says, "If you do not please the eye, you will not please the palate." He is right. We dare say some of our readers know the feeling when reading of a terrible surgical operation, or an accident, or something of the sort, there is a shudder begins at the extremities, and runs chilling up to the head. We felt something of the sort, when in our poultry experiences we visited a kitchen to view the operation we are advising. Our evening's conversation had been pretty much in the style of our present writing, and our fair hostess, while listening to our instructions, constantly repeated to her "other moiety," "Now, mind you recollect, Frank." After breakfast the good lady left the room, and "signalled her consort," who directly asked to be excused, and followed, we fancied, rather reluctantly. We make it a rule to go away from loud voices, but we are attracted by a merry, cheery, and ringing laugh. We heard such, and after a time we went to it, and found an unhappy chicken on the board. It had suffered we know not how many incisions in the endeavour to carry out our instructions. The lady very wisely had given up the task to her husband, who after vainly endeavouring to cut crosswise through the breast gave an awful chop just as we entered and certainly divided it, but in such a style as justified his wife's laughter, and gave us the chilling shudder we were speaking of. We do not believe a husband ever likes to be laughed at by his wife, and, therefore, it was with something of vexation he said, "There, that looks tempting, certainly." His wife said something about being cut to pieces by a railway train, and to prevent a continuance, we volunteered again to describe the whole process, as follows:—First, draw the chicken, take a sharp knife and divide the merrythought in the centre, then cut from the point of the breastbone straight along towards the neck, keeping the edge of the knife against the bone that no meat remain on it. When it has reached the end of the breast let the knife keep along the bone till it reaches the joint of the wing, which must be divided. Detach the under part of the breast by cutting it from the bone with the point of the knife, and you will have that which is termed a "fillet." There is one, of course, on each side of the breast. Cut the legs off at the knuckle; then take off thigh and drumstick, which you will divide. You have now the side bones to remove. Then cut the carcass in half lengthways; divide the back just below the oyster-pieces, and with a broad heavy knife or chopper flatten both pieces. Try two or three little chickens fried in this way, with some thin slices of cherry-coloured bacon, and we promise you a good dish. Some good judges, who like flavour, fry a few aromatic herbs with them. Do not forget the neck, gizzard, liver,

heart, legs, and breastbones—they considerably help the gravy to serve with it. We have wandered till we must defer future remarks and advice.

REARING POULTRY IN A CONFINED SPACE.

HAVING read the several papers upon "Poultry-keeping from a Commercial Point of View," and finding they have ceased, I beg to submit a few hints for the benefit of your readers, prompted by the perfectly theoretical style of those papers.

Before our friends go too deeply into the speculation, let us question the most reasonable plan for keeping poultry from a "truly commercial point of view," and I think we shall come to the conclusion that poultry may be kept with a much more commercial and business-like aspect in every home than is generally believed, and the enormous quantity of a million eggs per day would not have to be imported into this country. We need but to make it more universally known that poultry can be kept with profit in very limited spaces, and in London as well as the country, and show the public that by judicious care and feeding fowls will positively thrive well and lay just as many eggs as the very best yards in the country can boast of, and by so doing induce a thousand persons to keep fowls where only one person has hitherto done so. This, I maintain, is one way, and a certain, practical way, of keeping poultry from a commercial point of view, and by which the whole community would benefit.

There are very few houses in or out of London but what have tolerable-sized yards, or pieces of ground sometimes called gardens. If the sunny side of the smallest of these plots were parted off, and a neat but inexpensive dry roost and run made for only a few birds—that is to say, no more kept than would be required for eggs, and no cock allowed if there were only one house and run, as breeding would be of course quite out of character in such a case—further, if the family were taught to feed, but not fatten, the fowls thrice each day (and less if they did not pick up every grain thrown to them, one meal being saved from the house scraps properly cooked, and that meal prepared overnight, so that the scrap-meals might be all used up before any thing which had to be purchased were given to them), this, I say and maintain, would be the surest way to procure a poultry company upon a truly commercial system in every home, with but very limited liabilities and very limited expenses. I am sorry to say I have found numbers of persons commence keeping poultry and give up very quickly in disgust, declaring that each egg cost something like 1s.; but I am happy to be able to add, that I have prevented several from giving up who were about doing so. I always found the causes as nearly as possible alike—that the birds were not looked after often enough by the family themselves. They were left to servants to feed them, who threw down bowlful of food, which became trodden under foot and wasted. The fowls either became so fat that they seldom, if ever, laid an egg, or else they sickened; and as for cleaning, this seldom or never occurred until the filth accumulated to such an extent as to become a nuisance. As for dust, gravel, old mortar rubbish, the fine-ash siftings from the cinders—these sanitary additions were never thought of, and often not understood. Of course, if some of these people had an egg it was generally without a shell; an occasional sudden death occurred amongst the hens through over-feeding, and, of course, all helped to deter families from more generally keeping them. Then, again, with their feeding, the green meat was not attended to. To economise the greens, which every family can obtain more or less plentifully, the proper plan is to pull off the leafy portions from the stems or thick parts, and give the fowls as much as they will eat; the remainder, together with the stems and edible portions of the stumps, should be chopped up to about the size of peas, and mixed with their prepared scrap-meal. By scraps I mean refuse pieces of meat (after the bones have been well scraped, give them to the fowls to polish, which they will do most cleverly), every crumb of bread, and potato-peelings, which must be cooked. The meat, whether fat, skin, gristle, or lean, may be either raw or cooked, no matter which. The whole of these being mixed

will form their best meal, most nutritious, most economical, and most conducive to egg-producing; and if these materials should happen to mix a little too thin, add some barley meal, but this expense all must try to avoid. The consistence should be such as, when thrusting the hand in, the mixture will not moisten and stick to the fingers. All egg-shells and other shells should be burnt in the fire, and when the ashes are sifted and the refuse thrown to the fowls they will pick out every minute particle of shell. This will assist them in the formation of egg-shells, and materially help, with other limey particles which must be mixed in the dust, in keeping them in good condition.

There is a small point in this method which should not be overlooked—I mean the sifting of cinders. In every house there is a considerable quantity of ash made, and some coals make much more than others, but it is not in every house that you find a cinder-sifting box. If it is insisted on, as an important duty on the part of the servants, always to sift the cinders collected every morning when clearing out the fireplaces, to throw the dust to the fowls, for which they will show signs of thankfulness, and take back to the house the large cinders for use, a visible reduction in the coal account will be perceptible in many families, which must be placed to the credit of the fowls' account. By adopting such a practice a dust-bin will not be required; a refuse corner may, for the purpose of storing the manure for the flowers, if there is a garden; or if a yard, a corner is required also for broken crockery, &c., and for hiding the manure.

How often has the question been put, and answered by people themselves in the same breath, "My fowls used to do well; now they seem sickened, degenerate in size, weak in productive powers. Is it," they ask, "because the ground is tainted by them?" This, I assure my friends, is one of the principal answers to my queries why fowls should not thrive in large numbers. The earth becomes tainted by them; they sicken of their runs; they sicken amongst themselves, disease surely creeps in, and they droop and die; and poultry will not thrive well upon that plot for at least two years. It is proved beyond all doubt that no such a farm as M. Sora's or any other man's poultry establishment ever existed, or does now exist, where chickens are hatched by thousands and tens of thousands, and thousands of hens are kept for laying eggs in one or on one estate only; and the horse-feeding system was no greater ruse than any other part of the plan once set forth. My opinion of it was that the whole production was a mere idea which the promoter thought a novel one, and he would just startle the nations with it, and put it down as a *bona fide* affair in black and white. I should say he was most likely one of the members of the Society of Horse-eaters (Hippophagist), not very well pleased with his meal, so he entertained a new idea of disposing of the remnants of their feasts.

In conclusion, I must add that I believe the plan adopted in France for producing such large quantities is similar to the plan I have proposed to a certain extent—that there and in other countries greater numbers of separate families keep poultry; and that which tends to their success is, that as they find the poultry help them to live, they attend to them systematically; and those persons we call higglers go round regularly and collect the eggs from them; these, again, frequently sell the eggs to a factor, who is the exporter. This I can fully believe is the truly great poultry principle adopted in France and other countries.

With regard to the accounts of the hatching and rearing of chickens by millions in Egypt by the Bermeans, I believe fully in those accounts, but we are not in full possession of all the facts in connection with their proceedings. I cannot believe any one, nor one hundred, farms ever reared chickens artificially in any such quantities; so that I satisfy myself, and I think many of your readers will do the same, by believing that as the hatching of them by millions cannot be disputed, we must conclude that numbers of farmers and families came to these "mamals," as they were termed, and purchased them, and brought them up as best they could with the means they had at their disposal. Their climate was pure, and in every way calculated to assist them in rearing their birds artificially. They were good

growers of grain, and no doubt paid great individual attention to their feeding.—Old Fox.

[We have omitted all you wrote about the proposed Company. There is no need "thrice to slay the slain."]

PIGEON BREATHING WITH DIFFICULTY.

FIRSTLY. Spanish liquorice dissolved in their drinking water I have found to cure cage birds, and no doubt it would assist the Tumbler cock.

Secondly. I had a red mottled Air-Tumbler cock which was taken very ill last year, being affected with a sort of asthma and sore throat. I gave him pills containing 1 grain calomel and 1-12th of a grain tartar emetic—one daily for two or three days—after which boluses of cod-liver oil and flour, and he speedily recovered.

Lastly. I read lately in the German poultry papers that bacon cut in small worm-like shreds and rolled in antimony was a sure cure for such diseases in chickens, no water to be given for three hours afterwards.

The above is all the information I can give; it is only necessary for me to say that antimony is a poison, and I believe Canaries have died from drinking water in which 3 grains were dissolved in a quart of the water.—B. P. BRENT.

THE DERBY CANARY AND ORNITHOLOGICAL SOCIETY.

We have been favoured with a copy of the "Handbook of the Rules and Regulations of the Derby Canary and Ornithological Society, for Promoting Improvement in the Breeds of Canaries and other Fancy Cage Birds," and which also contains the standard properties by which the choice breeds of Canaries and Mule birds are there judged.

Mr. G. J. Barnesby, of Abbey Street, Derby, in his preface gives a cheering account of the rise and progress of this Society, which appears to be now in a flourishing state. The book contains a long list of rules and regulations, forty-one in number; but as Rule 8 declares, that "No person is admitted as a member of this Society unless residing in the county or borough of Derby," these rules can have little interest for the general reader. We can only express a regret at this exclusiveness in these days of railroads and the general diffusion of the Canary fancy. We cannot help expressing a regret that the Derby committee should consider it necessary to be so strict with their members, since the London Fancy Canary Club have found it obligatory to go with the times, and adopt a more liberal code.

The standard of properties, which is of much more interest to the general breeder, is on the whole good; yet the arrangement of the points, as 1, 2, or 3, is not in accordance with the value of these points as set forth in their accompanying explanation.

The properties for Belgian Canaries are exclusively for the Hooped or Bowed fancy, a variety which strikes the novice by its ugliness; indeed, this fancy, like many others, is one of cultivation. We do not perceive the necessity of distinct classes for Marked, or Ticked, and Variegated Belgians. Would it not be better to have one standard for the best-marked Pied Belgians? It must also be regretted that no class or standard of properties is given for that magnificent breed the Erect Belgian or, as some call them, Dutch birds. We think the same may be said of dividing the Marked and Variegated Norwich birds as of the Belgians, but we conclude these are local fancies and distinctions not recognised by fanciers in other parts, though we have seen the same division of colour at other shows, but could not regard it with favour.

The rules for London Fancy birds are the same as those of the London Club, and they will do well to adhere to Rules 8 and 9, "Legs for blackness," "Flue for blackness." The points for Lizards are well given. The Cobby or Crested Belgians have, as stated, "considerable grace." Mongrels we have no liking for, they are never satisfactory to the true fancier, though Cinnamon, Grass Green, and regular Pies are often very handsome and worthy of more attention.

We think Goldfinch Mules should be divided into Clear

birds and Pied, the one valued for their near resemblance to the Canary, the other for the regularity of their marking. Linnet Mules are also noticed, but other mules and sundry other breeds are not, we gather from a concluding note, because "they do not appear to find much favour" in Derby.

This Society holds a yearly exhibition, but it seems to be confined to the town and county of Derby.

"No appeals from the decisions of the judges shall be entertained upon any grounds whatever."

Prizes are also awarded for other British and Foreign birds.

The book concludes with a few good hints, but we cannot quite coincide with the last, that cats are not to be trusted; we can only say for ours that we can trust them, and though constantly among the birds they have never betrayed their trust. They are valuable in destroying mice, and also in keeping off stray cats which have not received a good education. We hope that this Society will take a more liberal view of the fancy generally and relax a few of their stringent laws.

REGICIDE AMONG BEES—HIVES DESERTED.

SINCE I last wrote in reference to bees killing queens of other hives, I have met with several instances of it, which I will relate.

The first was a hive to which some bees were presented that were benumbed with cold, they went in readily, but next morning the queen was thrown out, not dead but quite lively and able to fly. The commotion shewed distinctly to which hive she belonged, and when returned she was gladly received. While holding the hive in my hands in order to witness the result, I could distinctly see the motions of the bees, and while most of them paid homage to her, who was by this time a mother, there was one bee more restless than the rest which showed signs of great uneasiness, and it at one moment darted at her and would have killed her had I not prevented it. I am pretty certain that it was one of the bees I had presented to the hive the evening before.

The second case was that of a stock which lost its queen under the following circumstances. While manipulating a hive and taking some bees from it to add to a weak Ligurian colony, I saw two of the bees enter another hive, and in half an hour these two bees and the queen were thrown out dead.

The third case was similar to one which I mentioned some time since, and was that of a strong black hive from which I took some bees to add to another weak artificial hive of Ligurians. Although I saw the queen when the crown-board was removed, yet ere I laid it down she had disappeared, and after examining every comb I failed to find her. The day was warm, and by reason of the delay the smell was attracting robbers. At length I found her in a corner of the hive surrounded by a few bees. At the moment I was about to seize her a strange bee darted furiously at her when I had just caught her, and so intent was it on getting at her that it followed my hand, attempted an entrance, and nearly effected it, having hold of the queen by the wing, and actually stung my hand instead of her. I would, therefore, caution all apiarians while manipulating with bees which have a queen to try and prevent their entering other hives, as I am perfectly satisfied that strange bees will kill queens. Still while advancing this doctrine, I do not deny the fact of regicidal attacks, although I have never witnessed them; but this I know, that I have seen queens imprisoned by their own subjects when strange bees were admitted into their hives.

On the 5th of April, I noticed a commotion at one of my Ligurian hives, and found the queen lying before the hive; I raised her and placed her at the mouth, when she entered reluctantly, and in a few seconds I was astonished at the great number of bees entering; they had deserted and were returning. I thought the cause was their being few in numbers; and knowing the value of a Ligurian queen I did not wish to lose her, I therefore took about 5000 bees from a strong swarm of blacks and added to them. The Sunday following being a fine day they took wing again, and I was just in time to see the queen depart, but was too late to catch her, although she was the last to come out. They

entered a hive at some distance and were all killed. There were upwards of 15 lbs. of honey, and all in new combs. The only remarkable feature was the confused manner in which the eggs were deposited in the cells, there being from two to four in each cell.

Another case of partial desertion was a Ligurian hive which was strengthened with black bees four weeks previously. Sunday the 16th of April being another fine day, the whole of the Ligurians fled and left their fertile queen with her black subjects. The Ligurians tried to enter a very strong colony of black bees a quarter of a mile off, but were all killed. It appears to me that whenever the bees are unable to meet the demands of the queen they fly off, as I never knew a strong colony desert its hive, whilst I have seen a weak one with a barren queen remain till the bees had dwindled away and only the queen was left; but whether this partial desertion was from that cause or for the purpose of robbing I know not, but, perhaps, Mr. Woodbury will say to what extent the Ligurians are inclined to rob or change hives, as I remember his mentioning something of the kind. By so doing he will favour more than—A LANARKSHIRE BEE-KEEPER.

[The occurrence referred to by my Lanarkshire co-temperary took place on the 2nd of April, 1863, and was related by me in "our Journal" of the 12th of the following month (May), in that year. It consisted of the entire desertion of the bees of a Ligurian stock, attracted by what the Germans call the "swarm-tune," set up by a very powerful colony of black bees when released from confinement after a long journey, and placed in too close proximity to the Ligurians. This desertion was, however, speedily and completely remedied by causing the two stocks to change places. It is true that the Italians share the pilfering propensity, at least equally with their dark brethren, but I have never found them at all prone to desert their hives. In fact, most of the circumstances above related are quite unparalleled in my experience, and I trust my Lanarkshire friend will forgive me for hinting, that they seem to me almost to labour the suspicion of what may be termed over-manipulation on his part. I hope ere long to have the opportunity of redeeming my promise of considering what has been advanced by others on the subject of regicide among bees.—A DEVONSHIRE BEE-KEEPER.]

MAKING AN ARTIFICIAL SWARM.

I WISH to make an artificial swarm from a common straw stock hive which is very full of bees, many clustered on the outside. Under these circumstances I would perform the operation at once, but for the condition laid down by Mr. Woodbury, that drones should have made their appearance prior to the swarm being driven.

May I ask, if it is intended that it is only advisable that there should be drones in the swarm, or whether it is absolutely essential? After the swarm shall have been driven, would it be a favourable opportunity to introduce a fertile Ligurian queen, and can you tell me where I can purchase one?

I weighed my six stocks on the 4th ult., the weight was 126 lbs. gross, or about 90 lbs. for the contents of the hives. The loss in weight since the 3rd of December, 1864, a period of four months, averaged only 6½ lbs. per hive.—M. S.

[The presence of drones in an artificial swarm is not essential to its success, but it is absolutely necessary for the fecundation of the young queen that drones should exist in considerable numbers either in the parent stock or in some of the neighbouring colonies within, say, a fortnight after the operation. There would, we think, be a better chance of success if the introduction of a Ligurian queen were delayed two or three days after the formation of the swarm, but we do not know where you can procure one.]

EARLY SWARMS.—A fine top swarm of healthy bees was brown off a last season's swarm at Tollamill, Inverkeithing, on the 16th of April. It belonged to Mr. Henry Marr of that place. A hive at Westhall Gardens, Oyne, threw off a fine swarm on Saturday, April 22nd.—(Ran. shire Journal.)

VERY WEAK STOCKS.

Two hives, Nos. 1 and 9 are both extremely weak. From No. 9 are thrown out numbers of dead drones, and no increase of the other bees. Would you unite them? I do not think there is half a pint of bees in either.

[No. 9 has probably a drone-breeding queen, which should be got rid of before uniting. If this cannot be done we should dispose of the drone-breeder and the remaining bees together by means of sulphur, appropriating the combs and their contents to such purpose as they may prove best adapted for. No. 1 may in this case be best restored to prosperity by the addition of a small swarm.]

OUR LETTER BOX.

POULTRY SHOWS.—"A Hamburgh Shower" complains that he did not know of the Wharfedale Exhibition, or he would certainly have exhibited there. This is not the first letter upon such omission; but if Committees will not advertise in our columns, and send the necessary statements, we cannot save our readers from such disappointments.

DUCKS (Constant Reader, Nantwich).—If by saying the "Ducks were in a large pond," you mean that they sleep there at night, it will do them no harm.

GOOSE EGGS UNFERTILE (W. C.).—We do not know how you account for the three fertile eggs, but your gardener is right. If the tub is deep it may answer the purpose.

VARIOUS (Old Subscriber).—Your hens may sit in the cellars, but the chickens must be removed to a drier and better atmosphere directly they are hatched. Hens become egg-bound from a fevered state of body. The remedy is to dip a wing feather in oil, and to lubricate the passage with it. It affords immediate relief. The symptoms are—the hen walks with her tail on the ground. Many Bantams are uncertain breeders; the eggs you mention are not impregnated. We cannot believe any one would purposely spoil the eggs he sells for sitting. Leaving higher considerations out of the question, it would be against his interests. Game cocks' combs require no preparation.

REARING YOUNG PHEASANTS (Novice).—You must put your young Pheasants on a dry and dusty spot, where they will have plenty of sun. Feed them on curd, chopped egg, bread and milk, cooked meat, chopped fine. Buy "Pheasants and Pheasantries," by Baily, 112, Mount Street. It costs by post, 1s. 1d.

SWELLING IN HEN'S ABDOMEN (F. G.).—If the swelling in question is fat, the frequent doses of castor oil will remove it. If it is not, it is a fatal case, and a mere question of time. It often results from over-feeding, especially with meat. If it does not decrease, we advise you to kill her. You will find the hard substance made up of cheesy stuff, such as would be produced by a mixture of white and yolk of eggs. Let her diet be barley-meal and mashed potatoes, with plenty of green food, especially lettuce leaves.

SPANISH HENS WITH BREAST SWELLINGS (B. B.).—The swelling is a dropping of the crop. It is generally caused by a rupture or relaxation of the skin; at other times by a fevered state of body, which causes intense thirst, and they drink till the crop is unduly filled and distended. The latter case can be cured by confining the birds, and giving them a small allowance of water; if mixed with vinegar or wormwood so much the better. In the former case it is incurable. The hen will go on laying, but you must make up your mind to submit to the eyecore, or the pendant in front.

SPANISH HENS BALD (H. S. C.).—Rub the bare places with sulphur ointment. All this is sometimes the work of one hen; if that be the case, remove her. The knife is not necessary. The feathers will all grow again speedily.

GIDDINESS IN A PIGEON (J. L. J.).—Your Pigeon seems to have met with rather rough usage. The twisting round of the head would seem to indicate that the brain was affected; and not being able to fly may arise from the same cause or from injury to the back. If the scalp is much torn it may be softened by bathing with warm water. The edges may then be drawn together by a needle and thread, and the wound anointed with unsalted butter or lard. Place her in a quiet pen by herself; give a pill containing one grain calomel, followed by a teaspoonful of castor oil; avoid hempseed or stimulating seeds; and put down her throat daily three or four pieces of mortar about the size of peas. If the twisting of the head increases repeat the calomel and oil, and pull out the tail; this in growing will draw the blood from the head.—B. P. BREWER.

RABBITS (C. S.).—Ivy leaves will not injure them.

ERRATUM.—In the article at p. 352, "Hives with Entrances at the Top," the explanatory line under the woodcut should read—"A Passage sunk in the top, permitting entrance to the stock-hives."

LONDON MARKETS.—MAY 8.

POULTRY.

Our supply remains very small, and, but for the unprecedentedly small demand of the present season, prices would be very high.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	3	6	4	0	Grouse	0	0	0	0
Smaller do.	2	6	3	0	Partridges	0	0	0	0
Chickens	2	0	2	3	Hares	0	0	0	0
Geese	7	0	7	6	Rabbits	1	3	1	4
Ducklings	4	0	4	6	Wild do.	0	8	0	8
Guinea Fowls	0	0	0	0	Pigeons	0	8	0	8

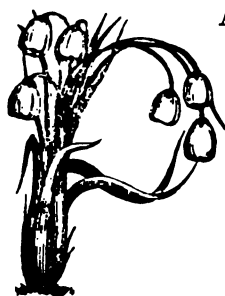
WEEKLY CALENDAR.

Day of Month.	Day of Week.	MAY 16-22, 1886.	Average Temperature near London.			Rain in last 38 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.		m. h.	m. h.	m. h.	m. h.	m. h.	m. h.					
16	Tu	Sweet Vernal Grass flowers.	64.1	48.0	54.6	16	8 44	44 7	morn.	12 9	21	3 52	186				
17	W	Primrose flowers.	65.5	41.7	53.6	15	7 4	45 7	15 0	24 10	22	3 51	187				
18	Th	Parulana flowers.	65.8	42.7	54.0	17	6 4	47 7	44 0	40 11	23	3 49	188				
19	F	Soft Brome Grass flowers.	66.2	43.1	54.6	13	4 4	48 7	12 1	after.	24	3 47	189				
20	S	Woodroof flowers.	66.3	43.8	54.8	18	3 4	50 7	40 1	18 2	25	3 44	190				
21	SUN	ROGATION SUNDAY.	66.3	44.8	55.4	16	2 4	51 7	7 2	33 3	26	3 40	191				
22	M	Sun's declination 20° 27' N.	65.5	43.1	54.3	17	1 4	52 7	37 2	52 4	27	3 36	192				

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 65.9°, and its night temperature 43.1°. The greatest heat was 86° on the 22nd, 1847; and the lowest cold, 30°, on the 18th and 19th, 1834; 20th, 1853; and 19th and 30th, 1856. The greatest fall of rain was 0.58 inch.

MISCELLANEOUS NOTES MADE IN HOLLAND AND BELGIUM.

(Concluded from page 357.)



ALLEY has maintained that every defect has its compensation, and certainly deafness had one on the 12th of April, for there were two Frenchmen in the carriage with us on that day who never ceased chattering nonsense during the two hours of travelling between Brussels and Ghent. And, then, what clever fellows have been deaf!—Kitto and Sir Joshua Reynolds among the past, and Professor Naudin among the living. It is almost

worth being deaf to be represented as Reynolds was at the Royal Academy last year with his trumpet to his ear listening to the reconciliations of the dying Gainsborough. Then the various uses that the hearing-trumpet can be applied to! Among others, we remember, an old lady who delivered seeds into drills through its small end. So even deafness may be connected with horticulture, and this brought us to Ghent, for we had long desired to make notes on its two most celebrated nurseries—Van Houtte's and Verschaffelt's.

M. Van Houtte is one of the men of mark of our generation—he has led in more than one successful struggle for freedom; for twenty years has he lectured gratuitously on horticulture to the young gardeners of Belgium, and during those years nearly 88,000 of them have been his auditors. The government wisely facilitate their resort to his lectures, for having the railways under its own control the government gives a free pass over them. He must be a capital lecturer, for he is full of knowledge, is a man of merriment, and one of the best talkers in Belgium. Besides, he is the editor of the "Flore des Serres," one of the best of floricultural journals. The illustrations of the journal are entirely prepared within his garden's enclosure. We saw the artist engaged on the original drawing; the lithographers and the colourists at work, and Van Houtte himself supervising all, and answering the most important of the letters received. This is no light task, for we saw the letter register, in which between January 1st and April 13th were noted and epitomised 2394 letters, which, deducting the Sundays, is more than 26 *per diem*. These, of course, for the most part enclosed orders for plants, and the extent of the business may be estimated from there being fourteen men and women at work in the packing-house, and we counted fifty packages ready for the van which had arrived to convey them to the railway station.

To meet such a demand there are thirty-nine propagating-houses, each about 100 feet long and 18 feet wide. To supply these and the hardy out-door plants there are

No. 216.—VOL. VIII, NEW SERIES.

eighty tanks distributed about the garden; for the soil is very sandy, and requires a large supply of water, and this is pumped up chiefly from the Scheldt by an engine working all day. This engine does other work, grinds corn, cuts laths for the shades, and other wood, &c.

The nursery includes thirty-eight acres, and, of all grades and employments, two hundred workmen have to be paid every Saturday. We estimated that there were two acres of Hyacinths in bloom and five acres of pyramidal Pear trees. Beside the buildings and offices we have enumerated, there is a large seed shop, potting-houses, carpenter's shop, and a boiler-maker's forge, with engineers and carpenters constantly employed; and a pot-store, with one man entirely occupied by cleaning and sorting the pots.

All the houses are heated by one boiler on Weeks's system, but there are two additional boilers provided, to be ready against accident, and as there is a gas-work also on the premises, our readers will appreciate what a microcosm it is of all that pertains to a nursery.

It would far exceed our limits to enter into minute details, but we may state one more fact to aid to an estimate of the extent of the business—one house 216 feet long and two other houses each 100 feet long are filled with Camellias alone.

Among the tree Ferns are some noble specimens, and it may prove a useful suggestion to some of our readers to notice that each Fern which had grown so tall as to be ready to thrust its head through the glass roof at once had the ground cut from beneath its feet—that is, a well was sunk, bricked round, and the tub in which the Fern was growing lowered into it.

We have mentioned that the engine cuts the wood for the shades. These are formed of half-inch square laths, and these are fastened one-third of an inch apart to ropes. The ropes are a foot apart, and these, of course, are the whole length of the shade. It forms a kind of Venetian blind, rolling up, and is far more durable than any kind of cloth. Each shade is 7 feet wide. The spaces between the laths admit a subdued light.

We lingered for hours in the proprietor's study, and could fill pages with notes of "Excursions among Van Houtte's books and pictures of plants," but we must only pause to remark that, as usual among the Belgian lovers of botany, there was more than one memorial of Dodoens; and well does he merit their veneration, for he was not only the botanist of Belgium but of the sixteenth century. His portrait, "Ætat 35," is prefixed to the "Herbal" first set forth in the Douthie or Almaine tongue by that learned D. Rembert Dodoens, Physician to the Emperour; and now first translated out of the French into English by Henry Lyte Esquier. At London by me Gerard Dewes, dwelling in Pawles Church-yard at the signe of the Swanne, 1578." There is a better portrait and a full memoir of Dodoens in the first volume of Morren's "Belgique Horticole." Even in the door of one of M. Verschaffelt's hothouses was a portrait of Dodoens in stained glass.

This leads to our notes on the second great nursery of

No. 263.—VOL. XXXIII, OLD SERIES.

Ghent, and indeed of Belgium—but we will not plunge among its vegetable treasures at once, but record collectively our obligations to all the Dutch and Belgian cultivators of plants with whom we held conference, for their uniform courtesy. M. Verschaffelt is a representative man—genial, replete with information, communicative, and talking English fluently, with no more of a foreign accent than is sufficient to render it racy.

His nursery is scarcely less extensive and his business scarcely less large than M. Van Houtte's. We counted thirty propagating-houses. Of Camellias 28,000 are grafted annually, besides the thousands raised from cuttings. M. Verschaffelt exhibits far and near at the continental shows, and the possession of 1000 medals, of which we saw 250, are unmistakable evidences of the richness of his stock, and the skill devoted successfully to its cultivation. In every department there was a neatness in details, and a healthiness without exception, which was very striking.

In noticing at page 343, Palms used as Room Plants, and to the propagation of which M. Verschaffelt addresses much attention, we omitted to particularise *Latania rubra*. It is a most agreeable addition to their groups, its red leaves in some measure compensating for the absence of flowers.

Among the most striking of profusely-flowering climbers is *Clerodendron Thomsons*. Two years since, M. Verschaffelt placed a plant of it at each end of a house, 45 feet long, and when we saw them in April, trained to a wire along the apex of the roof, they had met and presented an uninterrupted wreath of 45 feet long densely covered with the plants' lovely white, crimson-tipped flowers. It was a natural beauty not to be forgotten.

The Ferns throughout were gratifying specimens of careful and able cultivation, whether we turned our attention to the lilliputian species, or to the Brobdingnag specimens of such genera as *Cyathea*. Many of them had resisted all attempts to induce them to grow vigorously—and this well deserves attention—until they were grown in a house sunk 5 feet below the surface. The stems of the tree Ferns never matured when grown in a house, the floor of which was on the ground level. In the house sunk below that level the natural moisture of the air sufficed to induce the desired maturity, and the descent of rootlets in a kind of network on the exterior is very remarkable. Tree Ferns which had refused to thrive have in this house made rapid growth, though only removed to it in last November. Even *Cyathea Smithii* is there growing vigorously. The pots for even the largest specimens are only 15 and 20 inches in diameter.

With that note we must conclude, and hasten back to

"This other Eden, demi-Paradise;
This fortress, built by Nature for herself."

Thus John of Ghent, or Gaunt, as we English persist in calling him, described England, as Shakespeare tells us, and, let us add, if ever business, or even sterner need, take us again to Belgium, we shall readily adopt old Gaunt's advice, for we shall remember how much of gratification we there enjoyed, and again

"Call it a travel that we take for pleasure."
certain of not being disappointed—G.

ROCK PLANTS.

Success in the cultivation of rock plants depends in a great measure on providing them with a suitable soil and position. No hollow space should exist beneath them; but it is a very common practice to form the rockwork and fill in the crevices with soil, and the soil becoming too dry in summer the plants perish in consequence of their not being deeply rooted, for the hollow space beneath prevents this being the case. The rockwork, if properly formed, will have the lower and inner parts efficiently drained by filling up, as the work proceeds, with rubble or materials that will allow of the water escaping, without leaving any vacancy that will interfere with the well-being of the plants. In rocks that are carried to a great height the inner parts need not be composed of substances that will allow of the superfluous water escaping in that direction, but may consist of any kind of materials. The portion immediately below the rocks, however, should be loose and open, in order that water may drain from the surface and should communicate with a

part laid lower and filled with rougher materials so as to carry off the water. I have known a large mound formed and covered with rock so as to have a fine effect, but though several times planted it still remained barren, except the upper parts where the plants were more healthy. This mound proved to have been formed of what was little better than a mass of clay and mud, water would not percolate through it, and this so deluged the lower parts of the rockwork that the plants nearly all perished in winter, especially the more choice kinds, which were planted at the lower parts so as to be more under the eye.

Rocks, then, should be so formed that the lower parts may not be deluged with water, for though many rock plants like cool situations and moisture they will never thrive grown as if in a bog. The majority of Alpines are found on moist soil on rock, the under strata being rock or gravel, through which the surface water finds its way. Whether plants delight in moisture, sunshine, or shade, the draining away of water by the under strata is necessary to their existence, for none flourish in a wet and sour soil except aquatics. With plants peculiarly adapted for growing on dry rocks, moisture if at all excessive in winter is their certain destruction, and not less detrimental to their well-being is planting them in unsuitable positions. It is in a great measure owing to the bad construction of rockwork that the majority of Alpines are grown in pots. In forming rockwork not only should effect be studied, but the health of the plants to be grown upon it. It should be formed so as to permit of superfluous water being drained away, and there should be ledges and crevices between the surface stones which may be filled with soil.

As regards soil the majority of Alpines do well in a compost of turfy yellow, or hazel, loam, the top spit taken from a pasture and laid in a heap for twelve months, and turned over occasionally. To this may be added one-third of leaf mould, or where it can be had sandy peat would be preferable because more lasting. Some require peat soil alone, or mixed with a smaller proportion of loam; others a free open soil, which may be obtained by mixing small pieces of stone with the soil, sandstone being best; but brick rubbish will do if stone cannot be had.

The crevices and ledges being furnished with soil of the suitable kind (but without covering the stones to any great extent, and leaving some quite naked, otherwise the natural rock-like appearance will be destroyed), planting may be proceeded with. In doing so take advantage of a hollow in the upper part of a stone to introduce soil and a plant of a kind that will cover it in time. Guard against crowding; leave room for all the plants to grow into large patches, unless, indeed, they are not of a spreading nature, when they may be planted much more closely, but never so as to smother the non-spreading, but all so that they can grow and unfold their beauties without requiring much and frequent attention in order to keep them within bounds. In planting bear in mind that rockwork is expected to be interesting not at one particular period, but at all seasons, and do not put all the spring-blooming species in one place, and the summer-blooming in another, nor should those of which the merit mainly consists in their foliage be all collected in one place, but plant for effect at all seasons. In a word, mass them as you would bedding plants, and they will then form a fine feature in the distance, being beds of white, blue, red, and yellow, interspersed with green and rocky crags. It is astonishing what splendid masses some Alpines, usually so insignificant in pots, make when planted in nooks and corners of rockwork where, small as they are, they often become too large for the places assigned them. No one who has not seen them in masses in their native wilds, or in large clumps of rockwork, can form an idea of their beauty from the cultivation of them in pots or small patches.

Whilst providing for rendering the rockwork effective at a distance, these masses should not be seen all at once when close at hand. Another great charm of rockwork is to find some plant where no one would think of looking for it. Some of the more diminutive species should be apparently hidden by the masses of the spreading kinds, and though not productive of effect at a distance, will be very interesting at a near view. Alpines are best planted in spring, but those which are evergreen may be successfully removed after flowering. It is advisable to have them established in pots;

they can then be planted out at any time, either that, or transplanting with a ball, being necessary to the success of many kinds. A few will succeed without this care, but the majority require attention in planting and watering until established.

After blooming the dead flower-stems and those seeding should be cut away, the clumps or patches reduced if too large, thinned out, and weeded. In spring a little fresh soil may be placed around those which from want of soil do not spread so much as desired. The whole should be gone over twice a-year—in spring to add a little fresh soil to such as require it, to see that none are suffering from want of room, and to replace the dead with fresh plants; and again in autumn to remove all decayed foliage and give the whole a tidy appearance. At other times rock plants require but little attention beyond an occasional weeding in summer, watering in dry weather, and now and then a little regulation to prevent those of less luxuriant growth being smothered by their more vigorous neighbours. Want of attention, however, to these simple matters will seriously affect them in time, and a goodly selection will dwindle down to a very few kinds, and these, the commoner and more hardy. Rock plants, are a very numerous class; and to give an account of all that we have at present in cultivation would be extremely tedious. I can only, therefore, note on a future occasion some of the more conspicuous.—G. ABBEY.

IMPORTANCE OF AN ABUNDANT WATER SUPPLY.

WE cannot command the sun—the fire queen; but water we can supply. We can, in some measure, obtain artificial heat. I fancy that in time we shall geothermalise our gardens with hot-water pipes, and also lay down tramways for the easier transport of water. When we get an excess of sun, vegetation languishes, and when we have an excess of rain in a sunless summer, for want of heat and an equivalent evaporation, plants in our gardens put on sere and yellow leaves. Our gardeners often fail, and are blamed for faults not their own. How often do we see in large gardens only one pump, and that one in an inconvenient place to make the most of it.

Three of the most necessary things to look to, in selecting ground for a garden, are the capacity for free drainage, access to the sun's rays, and an adequate supply of water. A garden should be flat, and in the case of one pump, tramways should be laid down, and the water should be conveyed by water-carts drawn by a donkey or by a man. In either case much water may be conveyed with proportionately little effort. There is, however, another way still easier. Water-tanks on raised brickwork may be established near the pump. By a forcing-pump the water from the pump may be lifted into the tanks, hose of sufficient length to reach all parts of the garden, may be attached to the tanks and without further effort, by turning the screw, a man may "stand at ease," and water copiously the languishing plants. At a large establishment near here this is done. By machinery turned by a horse the water is forced up to the reservoir on the top of the stables, which are above the garden. It descends thence by a pipe, to which a hose is attached. I have myself watered with it the bedding plants effectually on a broiling summer's day. Nor is water less essential for culinary plants in such a summer as the last. There is, however, one plant to which I am more attached than to any other, which needs for the cleansing of its foliage, and also for other purposes, a deal of water in a burning summer—namely, the Rose.

The sun's power of exhausting moisture is beyond conception. Strong lands for a while supply the plant with moisture by capillary attraction; but as soon as the moisture is exhausted the sun bakes the land into a concrete, and burns up the rootlets. The plant, of course, will do no more that year, even if it do not die. Nor is this the case with Roses only. Were Beans and Peas invested with a voice, they would tell you of the necessity last summer for rain, or "*aqua pumpaginis*." What multitudes of things are burned up, or so checked before rain comes, that they are spoiled every torrid summer.

To show how much we owe to Providence for the supply

of rain, I copied (when I wrote this article, some months back), the following from the *Evening Mail*:—

"The deficiency of rainfall." "Few people have an adequate idea of what is really implied, when the Registrar-General reports, that the deficiency of rainfall at Greenwich in the last two years has amounted to nearly 14 inches. If that is an average instance, respecting deficiency in the country generally, then the quantity of rain in England and Wales in 1863 and 1864, has been below the usual quantity by at least 52,000,000,000 tons of weight of water, or 500,000,000 tons per week."

In my small place I have three pumps. Nothing that I care for ever lacks water. I love a dry summer and a West Indian sun. As the sun burns so I pump. Owing to this, last summer I had fruits in perfection, and a daily exhibition of Roses. The earth was as hot as a frying-pan. For lack of water no doubt many people's Roses suffered in their roots, and have been finished up by zero; but I have lost hardly any, and from summer-watering and winter-strawing I never had them in such splendid condition as they are now. The same may be said of the Strawberry plants and other things, all of which were kept well supplied with water.

It is to be hoped that proprietors of gardens, especially of large ones, will place at the head gardener's disposal sufficient water power. Without this, in such a summer as the last, he must be signally defeated. When the gardeners of England read this attempt to aid them, I have no doubt they will cry loudly, "hear, hear!"—W. F. RADCLIFFE, *Tarrant Rushton, Blandford*.

FRUIT TREES IN CULTIVATED AND OTHER GROUND.

SOME time ago Mr. Fish called attention to the fact that fruit trees are occasionally to be met with in a highly productive condition, although, so far as tillage of the ground is concerned, their roots are sealed up from the external air. Examples of this often present themselves, and now and then cases of an extreme character appear. It is not unusual to see a Pear tree occupying, perhaps, 400 or 500 square feet of wall, although its roots are under a stone or brick pavement, or, it may be, a macadamised road, and yet the health and fruit-bearing properties of the tree are all that can be desired. And why should it not be so? Nature presents us with examples of other kinds: an old Oak, around whose venerable stem the children of several generations may have gathered acorns, continues to put forth green leaves, and to bear its accustomed crop, with no more breaking up of the soil than that which arises from the action of frost; and probably Nature requires no more—at all events we see her work effectually performed without our assistance in the case of the Oak. The Hawthorn, Yew, and, in fact, timber trees of all kinds, carry on their growth in a manner which we cannot well improve upon—and all without the spade. Hence it becomes necessary to pause ere we too confidently affirm its utility in the case of fruit trees that have attained a fair bearing size. At the same time there are some considerations which ought to have due weight in arriving at a decision in their case.

In general great rapidity of growth is rarely wanted in any fruit tree except it be the Vine, or when, in some special case, a tree is wanted to occupy a given space as quickly as possible. More generally, however, a moderate growth and firm well-ripened shoots are desirable, and to obtain the latter, deep rich soil is, perhaps, not the best medium, unless it should happen that the summer, more especially the latter part of it, be dry and warm, so as to ripen instead of prolonging the growth of the young shoots. Mr. Fish justly observes, that ground having a hard firm surface is somewhat warmer than it would be if it had the loose texture given it by tillage, and we may give the warmer and drier medium the credit of ripening instead of prolonging the growth of whatever it may be cropped with. Now, in the case of fruit trees, early growth and its proper ripening are of the greatest importance, while with kitchen-garden crops, especially of certain kinds, the reverse state of things is wanted; and to combine the culture of the two, as is often done, must, of course, entail a somewhat intermediate course,

not the best possible for each individually, but unquestionably the best for the two united. Let us see how these considerations affect the class of fruits whose cultivation involves most uncertainty, and, commencing with the Peach, let us examine the general conditions under which it is grown.

I believe in a former article I have stated my belief that the Peach thrives best in a soil containing more than the average amount of saline matter, and in this view I was confirmed by a correspondent who had seen the rapid growth the trees make in South America, where the ground was almost crusted with salt. There is also some reason to believe that the soil of the districts in Australia where the Peach thrives so luxuriantly, is also more or less impregnated with salt, and in our own country some of the best Peach trees that I know of are to be found near the coast, where the influences of the sea air as well as the salt spray have given the required seasoning to the soil and atmosphere. In inland districts the prosperity or otherwise of the trees may also be in some measure attributed to the presence or absence of salt in the composition of the soil of the district in which they are grown, coupled, of course, with other favourable circumstances. This, however, is a digression from the object in view, which was to determine whether a surface rendered open and porous by tillage or one that was firm and hard was the better medium for the roots. On this point the evidence is naturally conflicting, as there are comparatively few Peach-borders which are not dug more or less, and the question of the utility of digging is as often answered in the negative as in the affirmative, by the trees not prospering in a cultivated border; nevertheless there are a few cases in which Peach trees on a border in a great measure exempt from cultivation thrive and produce good crops, and one of these cases of an extreme character may be adduced in support of the plan of non-cultivation.

About thirty years ago a gentleman who had a very good wall of Peach trees, which up to that time had produced good crops, and were by good management kept in tolerable health, thinking they showed signs of declining vigour, conceived that it arose from the border being cropped. The border, 10 or 12 feet wide, was not heavily cropped with early Peas, &c., as is too often the case, but was devoted to the growth of the best herbaceous plants, with now and then some from the greenhouse intermixed with them in summer. Of course, a certain amount of digging was performed in winter, and the gentleman thought there was an apparent falling off in the health of the trees, and as he was a keen horticulturist, he conceived the idea of having the flowers all removed, and the border covered with turf, which was done much to the chagrin of many who admired the choice collection of plants carefully arranged on that border of some 500 feet in length, as well as on one on the opposite side of a ten-feet-wide walk. However the turfing was accomplished, and the spade laid aside, and I was told with good result. Unfortunately, my acquaintance with the place ceased soon after the change alluded to, but from the evidence of a friend the trees prospered for several years afterwards. This, no doubt, is an unusual case, but it confirms Mr. Fish's views, in so far that tillage is not always an essential feature in the culture of healthy trees. I may add, that although the place in question was in the far north, and on an elevated position, it was nevertheless a dry one, a sandstone shatter forming the subsoil, with a great depth of sandstone underneath. Doubtless the free percolation of water through the soil had much to do with hastening the ripening of the wood. I believe that other plants not usually met with so far north withstood the winter very well in that garden, and one of the largest plants of *Hydrangea* I ever saw was in it, and some standard Figs had stood some years in a sheltered corner, but I do not think that they bore much, unless it was in the hot summer of 1826. To add to the favourable position of the Peach trees, the wall was flued, and for a month or more in spring, and the like time in autumn, fires were kept on to protect the blossom, and ripen the wood. These advantages, however, would seem to be wanted to counterbalance the bleakness of a situation at least 600 feet above the sea, and only twenty miles from it, in a latitude north of Carlsbad. Here, then, the trees thrived with a cultivated border; but they also prospered when the spade was laid aside, and

though their being either better or worse afterwards, was doubtless in some degree dependant on the seasons, and other circumstances, yet the fact of their doing well when grown with their roots under the turf is a point worth noticing, and in its way an unusual state of things. Now, let us turn to another case, and see how trees of other kinds thrive in a soil unmoved by the spade, or other cultural implement.

In districts where the hardy fruits are grown extensively there are various modes of managing orchards; but the most general one is to plant the trees on ground that has either been subjected to tillage or been dug or trenched for the express purpose; and usually tillage is continued for a number of years, depending, of course, on the character of the under crop, which may either be bush fruit, vegetables, or farming crops; but as the trees attain a greater size, tillage is given up, the bush fruit removed by degrees, and the ground sown with grass seeds. The last operation, I may remark, is done earlier in a Cherry orchard than where other fruits are under cultivation, as experience has proved the Cherry to suffer more from the spade than any other tree. Cherry trees on grass very often attain a patriarchal age; I believe there are instances of trees upwards of two hundred years old, though such ancient specimens are long past their best. Apple and Pear trees also thrive well on grass, and some very old specimens are now and then met with in such a position. At no great distance from where I write are some venerable trees of a bygone age. Their boles are in no place of less circumference than 4 feet; and though every winter destroys, or partly destroys, one or two of these ancient trees, those remaining produce very fair fruit in favourable seasons, and put forth leaves with the vigour of younger members of the vegetable community. They have existed on a piece of pasture land from a time beyond the recollection of the oldest person in the neighbourhood. Returning, however, to the case of Cherries, there is little doubt but that they benefit more by being let alone than when their roots are mutilated by the spade or plough, as is done in some cases.

It would be idle to point out instances in which trees have maintained a healthy and fruit-bearing condition for so many years with a turfed surface, and beneath an impenetrable roadway the roots of good fruit-bearing trees likewise very often exist. There is one thing, however, that ought always to be borne in mind—good tillage in the first instance promotes rapid growth, and therefore it is advisable to bestow some pains in the first formation of a plantation when the trees to be planted are required to grow rapidly. This recommendation is not confined to fruit trees, but is also applicable to forest trees and shrubs. Indeed as regards these, even when the ground presents some expensive obstacles to cultivation, the more rapid growth often pays for the outlay. At no great distance from here is a Chestnut coppice, one portion of which was planted on the ground unprepared in any way, whilst for the other the ground was trenched, and a considerable quantity of stones removed. It was exceedingly stony, with very little surface soil, and that composed of two-thirds stones embedded in a hard impenetrable soil resembling an old road more than anything else, and even when in cultivation it had anything but an inviting appearance; nevertheless, on such a soil many kinds of trees thrive well, and quickset hedges particularly so, but all are the better of the ground having received a good grubbing-up. I am not certain whether trees receive so much benefit from ground of this description being afterwards laid down in grass as in some other cases; at all events it is not so often done, for the reason that grass is by no means a productive crop on such soils. The above, however, is an exceptional case; let us now endeavour to find a reason for the advantages which middle-aged fruit trees unquestionably derive from being left to themselves in a great measure, especially at the root.

Trees, like men, have their period of youth, maturity, and old age, and when due encouragement has been given in the first period of life, the succeeding stages derive the benefit. Now, in a fruit tree destined to attain great dimensions, the earlier period of its existence is devoted to growth rather than to its producing fruit, and if let alone or judiciously managed its period of bearing comes on by degrees, and in

just proportion its growth is less rapid. Though its growth and bearing vary according to the seasons and other circumstances, its maturity approaches sooner or later, and the aim of the cultivator is to retain it in a healthy state as long as possible; nevertheless, there is a time beyond which his utmost skill is insufficient to do this; probably some natural cause, as an adverse season or other misfortune, may bring on the tendency to decay, and though the tree may have all the attention and assistance that can be given, it must in time succumb. I need hardly mention, that most trees become more prolific in blossom as they become older and decay sets in; but the lack of vigour in most of those blossoms is such that a great proportion of them fall off abortive. This, however, is a well-known state of things, but whether the decay of a tree is hastened by that cause, or retarded by cultivation, is a matter now left for our consideration, and from what observations I have been able to make, I should be inclined to say that the spade is an enemy to old trees, and, coupled with that, I am strongly disposed to add, that the knife is so also. Of course, I am speaking of old full-grown standard trees past their best, for, like ourselves, old trees are unable to bear violent changes when they no longer possess the vigour requisite to enable them to recover from any injury we may have done them. I certainly have never seen a fruit tree in a cultivated orchard so old as those in some that have been long laid down in grass, neither do our walls present us with such old specimens.

In classing both the knife and spade as enemies to great age, I expect many will except the latter, and, perhaps, adduce some good reason for doing so, but let us take an ordinary but somewhat severe example and mark the result. Take two aged Apple trees that are still in fair bearing condition, and supposing both to be alike in health, &c., let one of them be headed down to a dozen or twenty branches, and grafted in the usual way. The scions we shall suppose to take pretty well (as they generally do if well managed), and a good growth ensues, which is followed by a certain amount of cutting and pruning in the succeeding winter to give the proper shape. This is repeated for two or three seasons, when, probably, it is discovered some spring that a large limb involving quite one-third of the tree has died, and, probably, next year the remainder follows. The other tree on the contrary never having been mutilated in any way will remain in much the same condition as before, a little older-looking, certainly, but still likely to live for many years. This picture is by no means overstrained, it being, in fact, of so frequent occurrence that the heading down of old trees is very little practised now, and many whose experience is worthy of much attention, have expressed their disapprobation of meddling with old trees in any other way than by entirely removing them, affirming that extreme measures only tend to hasten their dissolution. I could point out many examples where old trees that had become crowded with mossy-covered branches, did not seem to produce any more or any better fruit by having their branches thinned, and cut into better form. Nature seemed to rebel against the proceeding, and refused to make amends in any way for the injury done. That there are exceptions to this I admit, but as the present article was intended to relate more particularly to the roots and their action in solid or disturbed ground, the subject of pruning may be left until another opportunity.—J. ROBSON.

CROSS-BREEDING STRAWBERRIES.

As a hybridiser of flowers and fruits I cannot let pass in silence the article inserted in your Journal at page 362, written by M. de Jonghe, of Brussels, in which he says all Strawberry flowers are fertilised before the blooms expand. If so, why have many thousands of forced plants gone blind this year? and, in fact, why do thousands go blind every year?

If M. de Jonghe could get a good Strawberry that would set its flowers as he says, he would make a large sum of money by it. The fact is nothing is so easy to fertilise as Strawberry blooms, but, to make sure of them, the plants should be forced a little in order to flower before the very hot weather commences. In dull weather I have found in Strawberry flowers it would be sometimes three days after

they expanded before the pollen made its appearance: consequently, as I have proved, nothing is more simple to effect than their fertilisation.—JOHN STANDISH, *Royal Nursery, Ascot.*

ROYAL HORTICULTURAL SOCIETY'S ORCHID SHOW.

THIS was held on Saturday last, the 13th, and though none of the great exhibitors of this beautiful order of plants put in an appearance, there was a tolerably good bank chiefly contributed by Messrs. Maule & Son, of Bristol, and Messrs. Lee, who also sent an extensive collection of stove and greenhouse plants.

In Class 1, *Aërides*, *Vanda*, and *Saccolabium*, Messrs. Maule were the only exhibitors, and had a first prize for the beautiful white and pink *Aërides crispum*; a fine example of the Foxbrush, with a spike nearly 2 feet in length, Veitch's *Vanda suavis*, and a good variety of *Saccolabium guttatum*, with eight spikes, grown, as well as several others of Messrs. Maule's specimens, in pottery-ware imitations of stumps of trees, varying from 16 inches to 3½ feet in height, having snags here and there with holes in them, and the interior stuffed with pieces of cork.

In Classes 2, 3, 5, and 8, for *Cattleyas*, *Lælias*, *Oncidiums*, *Miltonias*, *Odontoglossums*, *Anætochils*, and miscellaneous nine, there was no competition.

Class 4 was for three *Cypripediums*, and here Messrs. Maule took the first prize with pans of *C. barbatum purpuratum*, and *multiflorum*, each upwards of 2 feet across, and containing about forty flowers. The plants, it may be remarked, were divided and planted out at equal distances apart, and each bore a flower. The third species was *C. calycinum*, with small greenish yellow flowers, having short tail-like appendages, after the manner of *caudatum*. The second prize was awarded to Mr. Cullen, gardener to W. Wentworth Buller, Esq., Strete Raleigh, Devon, for *C. multiflorum*, a large-flowered variety of *C. barbatum*, and the curious South American *C. caudatum*, with two remarkably fine, highly coloured flowers with each of the tails 20 inches in length.

Class 6, was for Nurserymen's miscellaneous collections of twelve, in which Messrs. Maule were first with a fine pan, 28 or 30 inches across, containing divided plants of *Cypripedium barbatum nigrum*, bearing some forty-five blooms, *Vandas*, Foxbrush *Aërides*, *Saccolabiums retusum* and *ampullaceum*, *Dendrobium nobile*, and a good example of *D. Devonianum*, of which the cream, orange, and purple flowers render it so splendid an object for exhibition; *Aërides crispum* and the useful and the free-flowering *Oncidium divaricatum*, completed the number of this collection. Messrs. Lee came second with a small plant of *Cypripedium hirsutissimum*, a good specimen of *Dendrobium nobile*, *D. Dayanum*, and *D. Wallichianum*, *Oncidium altissimum*, *Phalænopsis grandiflora* and *amabilis*, each with three spikes of bloom, *Cypripedium barbatum* and its variety *nigrum*, *C. Hookerianum*, with the flowers very bright in colour, and *Cattleyas* in good bloom. Mr. Parker, Tooting, was third with a collection containing several good *Vandas*, and varieties of *Cattleya*, *Lycaste Harrisonia*, a very good plant with fifteen flowers, *Trichopilia coccinea*, *Phalænopsis grandiflora*, and a variety of this called *aurea*, in which the yellow eye was larger and of a more golden colour than the plant usually presents.

A miscellaneous collection of six from Mr. Robson, gardener to G. Cooper, Esq., had a first-prize. It contained the pretty *Cattleya amethystina*, the beautiful and free-flowering *Lycaste Skinneri*, one of the best of winter-flowering Orchids, *Oncidium sphacelatum*, with two good spikes and a small one, *Phalænopsis grandiflora*, *Vanda tricolor superba*, and *Cattleya Mossiae*. Another collection also came from the same exhibitor; and one of three from Messrs. Maule, for which a first prize was awarded, it being the only exhibition in the class for that number.

In single specimens by far the finest was a magnificent plant of *Vanda suavis* (Veitch's variety), from Mr. Hill, gardener to R. Hanbury, Esq., The Poles, Ware, standing at least 4 feet high, and bearing twelve fine spikes of its gorgeous cream-white and crimson blooms. It received a first prize, also Mr. Wilson Saunders' prize for the finest

single specimen. A second prize was awarded to Mr. Sherratt, gardener to J. Bateman, Esq., Biddulph Grange, for the Bornean *Coclogyne pandurata*, bearing three fine spikes of its large flowers, green, conspicuously marked with black in the lip, and which differ so much in colour from those of the other species of this showy genus. A similar award was made to Mr. Smith, gardener to S. Norris, Esq., Altrincham, for a fine spike of *Renanthera coccinea*, a plant which of late years has but very rarely found a place on the exhibition tables. In this case the panicles were more compact, and the flowers of a brighter colour, than usually seen. The new *Phalenopsis Lüddemanniana* was shown by several exhibitors, but in greatest perfection by Mr. Charles, gardener to R. Barnett, Esq., Blackheath Park, his plant having two spikes, bearing in all seven of its beautiful amethyst-coloured flowers, conspicuously barred with brown. For this a first prize was awarded; and second prizes went to Messrs. Low, who introduced it into this country, and to Mr. Robson, gardener to G. Cooper, Esq., for smaller plants of the same *Phalenopsis*. Other Orchids consisted of a fine specimen of *Trichoplia crispa*, shown by Mr. Pilcher, gardener to S. Rucker, Esq.; some good *Cattleyas* from Mr. Wilson, Dulwich; and *Cypripedium Hookerianum* from the Society's Garden, from which came also a new *Physurus* with beautiful olive green leaves and white markings, *Anthurium cordifolium*, Ferns, *Lycopods*, &c.

Although the special object of the Show was Orchids, there were, nevertheless, many excellent specimens of stove and greenhouse plants furnished by Messrs. Lee, which contributed much to the interest of the exhibition. Among them were large plants of *Rhopala magnifica*, *corcovadense*, and De Jonghi, the metallic green *Alocasia Lowii*, *Cyathea Smithii*, relieved by flowering plants, such as *Azaleas*, *Heaths*, *Pimeleas*, *Chorozeas*, *Boronia tetrandra*, the orange-scarlet-flowered *Leschenaultia intermedia*, *Adenandra fragrans*, &c. For these Messrs. Lee had an extra prize; and a like award was made to Mr. W. Paul for his collection of Beaton's *Geraniums*, which have been favourably noticed on more than one occasion in these pages. From Mr. Bull, too, came an interesting collection of novelties, conspicuous among which were the beautiful *Bertolonia margaritacea*, *Asplenium myriophyllum*, with finely-divided and very elegant fronds; *Sauraja sarapiigensis*, with ample foliage, having red midribs and veins, and his curious *Hose-in-hose Mimulus*. A variegated *Sedum* or *Sempervivum*; *Podocarpus macrophyllum*, with some of its shoots entirely white, others simply variegated; *Dracena stricta*, *Anthurium cordifolium*, a noble specimen of *Cibotium princeps*, *Zonate Geraniums*, and various other plants were also shown by Mr. Bull.

Mr. Gardiner, gardener to E. P. Shirley, Esq., Stratford-on-Avon, exhibited, in addition, dishes of *Reinette du Canada* and *Hanwell Souring Apples*, of good size, and in excellent condition.

PROPAGATING AND AFTER-MANAGEMENT OF BEDDING AND OTHER PLANTS.

THIS is a subject possessing a large amount of interest to those who are fond of plants, and of great commercial importance to those who gain their living by their cultivation and sale. What an amount of pleasure does the amateur experience in watching the little cuttings day after day, until he sees by their inclination to grow, that they have formed roots, and are to a certain extent independent of his care and watchfulness. By the gardener who requires a large stock of bedding-out plants, whose space is limited, and who has not the convenience of a propagating-house, the following simple plan of making a propagating-bed will be found useful. In the first place procure four stout oak posts, these are to be let into the ground one in each corner, at distances varying according to the size of the frame and bed for propagating. The two back posts should be left about 2 feet 6 inches out of the ground, and the two front posts about 18 inches above it. When the four posts are firmly fixed in the ground nail on the top of them four good pieces of wood, about 4 inches by 4 inches, to form the sides or bed on which the frame is to rest. Care should be taken to measure the bottom of the frame before the

cross-pieces are nailed to the posts, so as to have them of the exact size of the frame. Cross-pieces should then be put on to form the bottom of the bed, space being left between the cross-bars so that the heat may come through the bottom. After the pieces have all been put in the proper place, and the whole nailed together securely, the frame should be placed on the top. About 2 inches of broken bricks is then put in the bottom, and above this another layer of finer broken bricks or charcoal; but there must be no dust or dirt amongst it, the object being to keep the bottom as porous as possible, so that the heat may pass freely through, and be regularly distributed over the bottom of the bed. Next place 4 or 5 inches of some light, porous material in the frame for plunging the pots in; this completes the internal arrangement of the bed. A lining should then be built about 3 feet wide on all sides of the frame, leaving the space under the frame open—i.e., there must be no manure or leaves pushed under the bed. The lining should be built up square with the four posts on which the frame rests. The materials best suited for this purpose are two parts leaves, and one part good stable manure. The lining should be built up to within 6 inches of the top of the frame, plenty of water being used as the work proceeds, and well trodden to consolidate it as much as possible. As the lining sinks, which it will do in a day or two after it has been made, more leaves, &c., should be placed on the top, and this should be continued till it has become firmly set. In about five days from the time the linings are finished the bed will be ready for receiving the cuttings.

The object in leaving the open space below the bed, is—First, to cause the heat to be regularly distributed all over the bottom of the bed. Secondly, By these means the whole of the plunging material becomes warmed alike, or nearly so, and the centre of the bed is nearly as warm as the outsides. Thirdly, There is no fear of burning, nor of any rank steam getting into the bed. The hot steam is confined in the chamber below the bed, and comes regularly through all over the bottom. Another great advantage is gained by a propagating-bed in this way—namely, no worms, nor any other insects can get in. I find the best material for plunging in is the cocoa-nut refuse sifted through a fine sieve. It is very free from smell, is very light, and keeps the pots nice and moist, and never becomes soddened. To keep them sweet and clean the lights and the woodwork of the frame inside should be washed about once a fortnight. Much depends on this. Before this washing is commenced the cutting-pans should all be taken out and put into another frame, to prevent injury, and after the frame is cleared of all the pots and pans, the fine plunging material should be scraped back from the sides of the frame all round to let the water pass freely through the bottom without wetting the cocoa-nut refuse. After the sides have been washed this may be put in its place again, and the cuttings brought back. Once a-week the linings, will want stirring up, and fresh water, manure, leaves, &c. should be added, but care must be taken in doing this not to let the cold air into the chamber. If this is done much heat is lost, and the cuttings that are in the frame at the time receive a check which will cause many of them to damp off. Cuttings of *Verbenas* will readily strike in a frame of this sort in four or five days. Cuttings of these are put in, struck, and boxed off, and make good plants in less than a fortnight. In a two-light frame, 8 feet by 5 feet, mounted on four posts, and managed as above described, since the second week in March I have struck about 15,000 plants of *Verbenas*, *Lobelias*, &c.—J. WILLS.

(To be continued.)

EFFECTIVE COMBINATION OF COLOURS.

I HAVE now a combination of colours coming out at the same time, and that a time when the newness and freshness of colour is cordially appreciated, which may be worth recording. Two large plants of *Berberis Darwinii*, one mass of golden flower, crown the summit of a small piece of rock-work; between them the perennial white *Candytuft* forms a mass of pure white, and below is a sheet of the *Aubrietia grandiflora*. The tender green of *Griselinia littoralis* flanks one of the *Berberis*, and in the full sun the effect is very

striking. We often lose by not placing near each other the plants which not only harmonise in colour, but come into flower at the same time, so that perhaps this hint as to the effect of one accidental combination may be of use.—C.

DOUBLE AND TREBLE CROPPING.

I THINK it would not be amiss if some of our practical men were to give us a few articles on kitchen-gardening, and we were to compare notes. If each gave his own experience it would be very beneficial to young gardeners, particularly in these go-a-head days, and I have no doubt but that you will give us your assistance.

In the first place I am not writing to or for our more fortunate brethren who have their two or three acres of kitchen garden, and a good staff of men to work it, but to those who are situated like myself, with about half an acre of ground on which to grow fruit, vegetables, and salads for a large establishment, and living within an easy distance of Covent Garden market, which I consider makes a great difference in the wants of the kitchen department.

Now, suppose we take a piece of ground intended for early Peas. After having it dug deeply and well manured the Peas are sown on the 1st of January, and are cleared off by the middle of July; the ground is then dug again and planted with Coleworts, not forgetting to put plenty of manure in with them. The Coleworts come in nicely for early autumn use, after which the ground is ridged, and Endive planted in the furrows, making three crops in one year, and leaving the ground in good order for the next.

Again, by sowing the Scarlet Runners and tall-growing Peas 5 or 6 feet apart, I can plant two rows of winter stuff between the rows, so that when the Peas, &c., are done with, and the sticks and haulm cleared off, I have a good coat of manure forked in, and the earth worked towards the stems of the plants, leaving all neat and clean for the winter; or, if appearances are not an object, the pea rods being left form a capital protection for the more tender kinds of winter crops, as Broccoli, Savoy, &c.

Then, again, as regards the ground upon which the spring Cabbages are growing. Between the rows of Cabbage I plant Potatoes, so that when the Cabbages are cut the Potatoes are ready for earthing up. After the Potatoes are taken up, and the ground well manured, I generally sow my winter Spinach on that piece. For early Potatoes I select a piece of ground lying under the south aspect wall. When the Potatoes are planted I sow Radishes and Lettuces on the top, so that when the Radishes are all pulled, and the Lettuces pricked out elsewhere, the Potatoes are ready to flat-hoe. When the Potatoes are dug the ground is planted with the first batch of Savoy, which are generally off in time to allow of the ground being trenched ready for the next season's work. Between the rows of second early Peas I generally throw out my Celery trenches, and before the Celery is ready to plant I work my Cauliflowers off in the same trenches, and by the time the Cauliflowers are cut, and the Celery just established, the Peas are ready to come off, leaving plenty of room for the Celery, earthing-up, &c. Thus by deep digging, frequent flat-hoeing, changing the crops, and last, though not least, an unlimited supply of manure, I generally manage to have two or three crops a-year off the same ground, and seldom or never fail to have a good supply of vegetables and salads—in fact the past summer and winter would soon convince one whether his system were right or not in that respect, and though I must confess it is hard work for the land, yet in my opinion the land is better every year.

I do not know that there is anything new in my system, but the desire to impart information as far as the preceding random hints will do so, has induced me to pen the above with the hope that some one more capable than myself will take the matter up, and give us a few good articles on kitchen-gardening in general, and one of the first to profit by them will be—BURNWOOD, P. D.

LIVERPOOL FLORAL AND HORTICULTURAL EXHIBITION SOCIETY.—The meetings of this Society will be held in the Botanic Garden on the 25th of May, the 29th of June, and

31st of August. Liberal prizes are offered for Azaleas, Pelargoniums, and other flowering plants, also for fruit and vegetables.

THE POLES NEAR WARE.

ABOUT a mile and a half from the Ware Station of the Great Eastern Railway, is The Poles, the seat of E. Hanbury, Esq., one of those gentlemen, who, possessed of an ample fortune, delight in gardening and rural pursuits. Entering from the road leading to Wade's Mill by a modest lodge, the visitor passes along a winding drive through a pleasantly undulating park of about a hundred acres, dotted with Oaks and Elms, and old Thorns, and through a belt of newly-planted Rhododendrons, which when they shall have attained a larger size, will, doubtless, in their flowering season have a very ornamental effect. In front of the mansion is a well-kept lawn, with here and there Wellingtonias, Abies Douglasii, and Cedars of Lebanon, and further off the pinetum. Turning, however, to the right we come to the conservatory on the south side of the house. It opens into the drawing-room and library, and at the time of our visit was filled with Camellias, and various other flowering plants, together with a noble specimen of *Cyathus medullaris*.

In front of the conservatory and this side of the mansion runs a terrace, overlooking a roserie, which is planted with a good collection, consisting of Hybrid Perpetuals, whilst Tea Roses are trained against the six-feet-high terrace wall. The centre of the roserie is formed by a pedestal and vase encircled by four quadrant beds, then a circular walk, and exterior to this twelve other beds converging towards the centre, the whole being surrounded by four borders separated from each other by the four principal walks, which meet at right angles at the vase in the centre. Above, on the terrace, there are twelve beds on each side of the walk, six oblongs with the corners swept out alternating with the same number of circles, and the whole planted with standard Roses. Continuing onwards we come to a ribbon border planted with—first row, next the edge, Hyacinth Maid of Perth, blush; second, Rex Rubrorum Tulips; third, Dr. Lindley Hyacinth, purple; fourth, Rex Rubrorum Tulips; fifth, double Roman Narcissus. This border had still a cheerful effect, although the bright sun had somewhat told on the flowers. To reach this ribbon border, however, we have passed on our left the greenhouse, fernery, and Orchid-houses, forming three sides of a square in which was a small garden devoted to sweet-scented plants. In the stove were three fine plants of *Musa Cavendishii*, which is here fruited every year; and Mr. Hill, the persevering and very intelligent gardener, cut forty fruit at Christmas off one plant. A *Bougainvillea* trained on the roof contributed by its rosy bracts, along with Begonias, Francisceas, and other flowering plants, to give this house a gay appearance. The fernery contained a well-selected and healthy collection of *Adiantums*, *Aspleniums*, *Davallias*, *Lastreas*, &c., and remarkably fine plants of *Cibotium princeps* and *Schiedei*, *Lonchitis pubescens*, *Gleichenias*, and *Marattias*. A plant of *Thunbergia Harrisii* extends for 15 feet along the roof, and in the course of the season produces thousands of its beautiful blue and yellow flowers. In the Orchid-houses, three in number, Veitch's variety of *Vanda suavis* had three splendid spikes of bloom, and several more were coming; the lovely *Cattleya Skinneri* was also in fine bloom, besides which there were fine examples of *Aërides*, *Ansellia africana*, *Vanda teres* and *tricolor*, and numerous plants of *Phalenopsis grandiflora*, which is in demand for cutting; the new and beautiful *P. Schilleriana*, which had been in bloom for the last three months; *Brassavola Digbyana*, *Chysis Limminghi*, *Dendrobiums*, *Cattleyas*, *Lycastes*, *Cypripediums*, &c.

In these houses *Alocasia metallica*, pot plants of *Bougainvillea glabra*, Ferns, and *Amarylids*, also found a place, whilst on the roofs were trained *Lapagerias*, *Mandevilla suaveolens*, and *Hoya imperialis*, which had been in bloom all the winter, and was so still. In the greenhouse, too, a good show of flower was kept up with *Calceolarias*, that valuable winter and spring flowering plant, *Imantophyllum miniatum*, *Eriostemons*, *Chorozemas*, *Heaths*, &c.

Quitting the houses, on passing the west side of the fernery we observed two small beds filled with Tea Roses,

pegged down, and which when in bloom, besides scenting the air with their delightful fragrance, are stated to be very effective. In very severe weather these are protected with mats. Adjoining these beds is a bank of rockwork planted with Alpines to the number of 400 or 500. A winding walk leads to the north front of the mansion, and on the opposite side of the walk beyond a belt of the different kinds of Hollies, and surrounded on the other sides by Berberies, lies the pinetum, about an acre in extent. This was planted only ten years ago, but already some of the specimens have attained a considerable size. A *Picea Nordmanniana*, certainly one of the finest in the country, perfectly erect, and well furnished throughout, was from 24 to 25 feet high, and *Picea pinsapo*, 15 feet high, and 10 feet through. The largest *Wellingtonia* was 13½ feet high; one only 6 feet high had three cones on it, but as stated at p. 359, this tree produces cones at a very early age. Cedars of Lebanon had also attained a good size, one was estimated to be nearly 40 feet high, and there were several from 25 to 30 feet. Of other species there were good thriving specimens of *Thuja borealis*, *Cryptomeria japonica*, *Picea nobilis*, *Abies Douglasii*, *A. orientalis*, *Juniperus chinensis*, *thaurifera*, *Taxodium sinense* or *Glyptostrobus pendulus*, a very elegant tree 6 feet high; the *Davallia Yew*, deserving more general cultivation, on account of its prostrate habit; and several pretty pygmies, such as *A. excelsa* *Clanbrasiliana*, and *excelsa elegans*, ranging from a foot to 1½ foot high. One great feature of this pinetum, and indeed of the garden generally, is that every tree is legibly named, adding much to the pleasure and instruction which such a garden is capable of affording. We mention this more particularly because in some public gardens plants are not unfrequently unnamed, and consequently lose much of their interest to the many.

The kitchen and fruit garden covers a space of five acres, of which two acres are enclosed by walls 15 feet high, built hollow on the same plan as those at Chiswick, which, unlike other forms of hollow walls, have exactly the same appearance as a solid one. The wall on the south side is 300 feet long, giving of course 300 feet of south aspect and a corresponding extent of north aspect, and at right angles to this wall run two others, and one dividing the enclosed space up the centre. Each of these is 240 feet in length, and the whole, consequently, give 720 feet of west aspect and a like extent of east aspect. The borders are 15 feet wide, and variously cropped to within 4 feet of the wall. The south aspect is covered with Peaches and Nectarines now rapidly covering the wall, and when this is effected all riders will be removed. The trees were chiefly *Grosse Mignonne* and *Barrington Peaches*, and *Violette Hâtive* Nectarines, and were all in excellent bearing condition. But it was on entering the walled-in garden that we were more especially struck with the appearance of the trees. The walls were literally covered with blossom, and the trees in a healthy bearing state from top to bottom. The north aspect is chiefly occupied with fan-trained Plums and Cherries, the former consisting of *Coe's Golden Drop*, *Magnum Bonums*, *Angelina Burdett*, *Kirke's*, *Orleans*, and *Victoria*; the latter of *Elton*, *Black Tartarian*, and *Morello*, one tree of which alone extends over a width of 25 feet. The east and west aspect walls are covered with excellent horizontal-trained Pear trees of the best varieties, as *Duchesse d'Angoulême*, *Louise Bonne of Jersey*, *Glou Morceau*, *Thompson's*, *Althorp Crasanne*, *Josephine de Malines*, *Easter Beurré*, &c., Plums, and Cherries. Along that side of the walks farthest from the wall, at 6 feet from the edge, are planted about 200 pyramid Pears, from 12 to 18 feet apart. These were all root-pruned two years ago, and were, like those on the walls, white with blossom. The interior was variously cropped with Peas, Carrots, Cauliflowers, Asparagus, and other vegetables, and the supply is supplemented by the produce of the outside slips, in which there are standard Apples, Plums, and other fruit trees.

We now come to the south-aspect wall on the north side of this garden. Here there are four vineries each 30 feet by 15 feet, and a Peach-house 40 feet long by the same width. In the first house heated by five rows of four-inch pipe were fine crops of Black Hamburg, Trentham Black, Muscat Hamburg, and Frontignans, and in a succession-house Black Hamburgs, Lady Downes, and Muscats in

pots, the two former having set a good crop, and the last being just started. We also noticed good crops of Strawberries on the shelves of these houses. The fourth vinery was a Muscat-house, in which fresh Vines had been planted to replace the old. The most pleasing sight, however, was the Peach-house, the roof being covered with two fine trees bearing a profusion of fruit which had stoned, the foliage very healthy and free from all appearance of insects, and not a fallen fruit to be seen.

A span-roofed Peach-house formerly an orchard-house, but now heated, 36 feet long, 18 feet wide, and 10 feet high to the ridge, was also planted with Black Hamburgs and Buckland Sweetwater Vines, trained along the ridge, whilst on shelves were numerous pots of Sir C. Napier and President Strawberries, bearing very freely. A second span-roof was devoted to Figs well set with fruit, the kinds being chiefly Brown Turkey, White Ischia, and Early Violet, which produces a small sweet fruit, is a very free bearer, and excellent for forcing. Other houses contained pot Vines started to come in at Christmas, Bowwood Muscats just colouring, Oranges in pots grown chiefly for their flowers, good crops of Strawberries, Kidney Beans, and Cucumbers. Of the last Mr. Hill has a very prolific variety of his own, raised by him several years ago between the Manchester Prize Cucumber and Black Spine. The fruit averages 18 inches long, and is produced in twos, and sometimes three or four at a joint.

There still remain two span-roofed plant-houses to notice: the one, an Azalea-house, contained very good specimen plants, such as are to be seen at the London shows, new Aucubas and other Japanese plants, *Calceolarias*, and miscellaneous flowering plants; the other, a roseery, contained Tea Roses, both in pots and planted out, and trained up the pillars. Here *Gloire de Dijon*, *Madame de St. Joseph*, and several others were in fine bloom.

Various pits contained a good stock of bedding plants, herbaceous *Calceolarias*, *Cinerarias*, *Mignonette*, Japan Lilies, including *Lilium auratum*, and other plants for indoor decoration; and there was besides about 60 yards run of frames for forcing vegetables in winter and Melons, &c., in summer. At the back of the north wall of the kitchen garden were the men's rooms, not the small, low, dark, and badly-ventilated rooms too commonly met with, but 14 feet square, and 9 feet high, heated by hot water, and with ample provision for air and light. The number of hands employed is twenty-one, but only six are lodged in the grounds. In the same range is the stable, Mushroom-house, in good bearing, fruit-room, tool shed, and Mr. Hill's office. Where there is such a liberal employer as Mr. Hanbury, and such a zealous and well-skilled servant as Mr. Hill, great things may be expected, still we were not prepared to meet with such high-keeping and thorough efficiency in every department, everything that was done was well done, and it is no exaggeration to state that there was not a weed to be seen.

LACHENALIA, OR CAPE COWSLIP:

ITS CULTURE, AND A SELECTION OF THE FINER SPECIES.

We cannot but regret that those singularly beautiful and interesting spring-flowering bulbs the *Lachenalias*, such great favourites with our forefathers, are now so much neglected, and that they have been driven out of cultivation by many of the less-deserving novelties of the present day.

The *Lachenalias* are all spring-flowering bulbs, natives of the Cape of Good Hope and adjoining parts of South Africa; they belong to the same natural order (*Asphodeales*) as the Hyacinth, Star of Bethlehem, Garlic, and the Mink or Grape Hyacinth, and to the latter they are closely allied. This curious and interesting genus contains numerous handsome species and varieties, a great many of which have now disappeared from our collections, chiefly, no doubt, from the plants having been neglected after blooming, or placed out of doors and exposed to the heavy rains, where, owing to their being grown in pots, they frequently become sodden—a circumstance which is sure to cause the bulbs to rot, these being very succulent, scaly, and covered with a dry scaly bark very different from that of most other bulbs.

The different species of *Lachenalia*, or Cape Cowslip are

not only valuable for the duration of their flowers, but for the varying bright tints which they assume whilst they are in bloom, for the flowers of many of them are constantly on the change, from rosy infancy to yellow maturity; the flowers also assume an elegant pendent position on the stem, expand but little at the mouth of the tube, and have the appearance of one flower partly within another—an appearance which arises from the outer or shorter parts being the sepals, and the inner or longer ones the petals. *Lachenalias* may be had in flower from January to June, if a portion of the bulbs be introduced into the forcing-pit at different times along with other early spring-flowering bulbs; for the *Lachenalias* require no more care than a *Hyacinth*, and last quite as long, if not longer, in bloom.

Most of the species have various-coloured flowers, spotted leaves, and beautifully-mottled flower-stems, which rise from 6 to 12 inches in height, and are mostly furnished with from twelve to eighteen loosely-placed, drooping, tubular-shaped flowers, which in most cases as the blossoms advance change colour from bright red and deep yellow to a pale red or yellowish-green. A few of them, however, have self-coloured flowers, which are either orange, yellow, red, pale blue, or white, changing with age to a pale blush. The leaves are mostly lance-shaped, glossy green, recurved, and beautifully spotted on the upper surface; the flower-stems are also prettily marbled, and, together with the spotted leaves, contrast well with the graceful spikes of pendent or semi-pendent flowers, the exquisite combination of whose changing hues defies every attempt of the pencil, and description or portraiture fails to do them justice.

Lachenalias will succeed in a warm south border, if well protected in winter by a hand-glass, and other dry covering in severe frost. What, however, is much better, and frequently more convenient, is to place half a dozen bulbs in a pot of light soil, in October, using equal parts of fresh loam, rotten leaves, and fine sand, and affording them the protection of a cold pit until the spring, when they can be planted out in the open border, and sheltered for a time with a hand-glass.

If the bulbs are intended for in-door decoration, they should be placed on the top shelf in the greenhouse near the light, and but sparingly watered during the winter; but freely so when the plants are in a growing or flowering state. When the plants have done flowering, the pots should be placed in a cold frame or pit, and the plants encouraged to complete their growth, and perfect their bulbs, for upon that all future success depends. When the bulbs have lost their foliage, they should be taken out of the soil and kept dry in as cool a place as possible, that they may not begin to grow too soon. By this mode of treatment the bulbs may be either at once planted out in the warm border in spring, and protected by a hand-glass, or be potted in the autumn (in the end of September or beginning of October) and placed in a cold pit, secure from frost, where they must be kept tolerably dry until wanted for forcing, placing in the greenhouse, or planting out in the spring. The different kinds of *Lachenalia* increase freely by offsets from the old bulbs. Even the leaves under certain circumstances produce bulbs, and beautifully illustrate the analogy between bulbs and buds, the affinity of which is more perfect than many persons probably imagine. Of this the *Lachenalias* present a pretty example, bulbs being produced from the leaf and flower-stem. Of this curious phenomenon Sir James Edward Smith relates that he had scaly bulbs from flower-stalks of the *Lachenalia tricolor*, whilst laid for many weeks between paper to dry, and which on being put into the ground became perfect plants. Mr. John Rogers also relates another instance which occurred in his garden near Sevenoaks, in Kent. The leaf of a species of *Lachenalia* having been broken off before the sap had descended to the bulb, on the broken edges and lower part of the leaf there were produced upwards of forty small bulbs, varying in size from that of a pea to a small pin's head.

Many of the names given to *Lachenalias* in catalogues are, no doubt, synonymous, or applied to trivial varieties. The following selection, however, contains the finer and more distinct kinds now to be found in cultivation.

LACHENALIA TRICOLOR (The Three-coloured Cape Cowslip).—This is one of the oldest and handsomest kinds we have. The flower-stems rise to a height of 8 or 9 inches,

and generally produce from twelve to eighteen flowers, which are loosely placed, drooping, tubular-shaped, and composed of three colours—namely, bright red, yellow, and green. The colours of the flowers, however, have but little permanence, for they change considerably as the flowers advance to maturity; being when young of a bright red and greenish yellow, while when fully matured they are of a light yellow, stained near the ends of the petals with pale green. The leaves and flower-stems of this species are beautifully spotted and marbled with reddish brown. There are two distinct forms of this plant, one with broad leaves, and another with narrow ones, which latter is frequently named *quadricolor* in gardens.

LACHENALIA FLAVA OR AUREA (The Golden Yellow Cape Cowslip).—This is a beautiful kind with large, tubular-shaped, golden yellow flowers and spotted leaves. The flowers are more or less drooping, and produced on stems from 6 to 9 inches long.

LACHENALIA LUTEOLA (The Pale Yellow Cape Cowslip).—This is a strong-growing kind with flower-spikes from 8 to 9 inches high, furnished with numerous partially drooping, tubular-shaped, light yellow flowers, stained with pale blush when young. There are two varieties, one with spotted, and the other with unspotted leaves and flower-stems.

LACHENALIA PALLIDA (The Pale Blue-flowered Cape Cowslip).—This kind has flower-stems from 9 to 12 inches long, furnished with large tubular-shaped flowers of a pale blue colour when young. There are two varieties of this kind, one the minor with very pale blue flowers, which change to blush when fully blown; while the other has bluish-coloured flowers, and a more robust habit of growth.

LACHENALIA ANGUINEA (The Snake-stemmed Cape Cowslip).—This has spotted leaves, and beautifully marbled flower-stems, from 9 to 12 inches high, sparingly furnished with tubular, bell-shaped, drooping, white and green flowers, which fade away to pale blush with age.

LACHENALIA PENDULA (The Pendulous Cape Cowslip).—This is a fine robust-growing kind with large, bright, parti-coloured drooping flowers, deep red, bright yellow, and pale green when young, but these colours become much lighter or more pallid as the flowers advance to maturity. The flower-stems grow from 9 to 12 inches high. There are two very distinct varieties, one with spotted leaves and flower-stems, and another with unspotted ones.—GEORGE GORDON, A.L.S.

CUTTING DOWN YEW HEDGES.

If the Yew trees are planted thick enough, it is not absolutely necessary to cut them down, as directed in answer to "R. R.," page 366. They may be deprived of their branches from the base to the top, and they will break thickly all over; or the branches on one side may be lopped off, and the others left on for awhile, to be served in due time in the same way. Be careful where you put the loppings. Yew loppings killed two beautiful Guernsey cows that I gave to Lord and Lady Curzon on their marriage.—W. F. RADCLIFFE, *Tarrant Rushton*.

THE MODERN PEACH-PRUNER.

No. 9.

WE now come to the consideration of the shorter shoots of the Peach. These valuable classes have hardly met with the notice they deserve at the hands of long-pruners. Indeed, in some works it is recommended to suppress them as much as possible. This is a great error; for other writers, such as Knight and Dubreuil, recommend their careful preservation, wherever found at all possible; and in the works of such masters of close pruning as Professor Gressent, of Orleans, and M. Grin, of Chartres, the main dependence for fruit is placed on Class 5, which is well known, moreover, to produce the finest specimens. Very close pruning, such as is well suited to orchard-house trees, rarely fails to develop Classes 5 and 7 in great abundance, especially in the case of established trees. Though all the classes of this division occur under every form of training, they are peculiarly the result of that sudden concentration of the

sap, during the period of its greatest ascent, at the base of the shoot, which is produced by judicious summer stopping. In some mysterious way an obstacle is created, which appears to concentrate the cambium in the cellular tissue near the base of the nascent bud, and by this retarded circulation to produce eventually a cluster of blossom-buds, which are eminently fruitful. It is not, however, pretended that late summer stopping would be so successful.

2ND DIVISION OF PEACH SHOOTS.

5. THE CLUSTER SHOOT OR SPUR (*fig. 5*).—The word cluster, which so appropriately represents the appearance of the blossom-buds *b*, round the terminal leaf-bud *c*, is synonymous with the French term "bouquet." By this last name this particular spur is known all over France. Dubreuil calls it *rameau à fruit bouquet*; and Gressent and Lepère call it *bouquet de mai*. Knight appears to designate it as a "spur," and the word "cluster" may be considered an appropriate English rendering. Class 5 constitutes the basis of very close pruning, such as that which M. Grin, of Chartres, practises, and is also the end and aim of established orchard-house training. This class is common on the two and three-year-old wood, and indicates both fertility and health in the tree. Under all forms of cordon training Peach trees this type is abundant. Together with No. 7 it should in orchard-houses form the greatest portion of the fruit-bearing shoots. In the case of a Downton Nectarine bush which had been about eight years in a pot in my orchard-house, out of 120 fruitful shoots no less than 110 were of Classes 5 and 7. The blossom-buds almost all set in clusters of four or five, requiring to be thinned down to one fine specimen. All writers agree that this class of shoot should not be meddled with or pruned in any way; neither should it ever be rubbed off, no matter where it occurs. It is a perfect type, and will reproduce itself by means of its terminal leaf-bud, besides maturing the finest fruit. At the ensuing season it may present the appearance of



Fig. 5.



Fig. 6.

6. THE FRUIT SPUR AFTER BEARING (*fig. 6*).—This is one of the types of perfect shoots which have been added to M. Dubreuil's classification. It has, therefore, no French synonymous name; nevertheless, it is of a sufficiently distinctive character and appearance to warrant a separate notice. To orchard-house pruners especially it will be welcome, as it is occasionally difficult to treat. The reason is that the specimen here drawn from nature is of a slender form, and the blossom-buds at *b* have evidently fallen off without setting, which shows a want of vitality in the tree. A shorter and more sturdy form, then, might have been chosen to represent the class, and then it would probably have appeared where the fruit had been attached. This one has not elongated much, the leaf-bud *c* marks its extreme development; at the same time it is on the point of extension, and will by the end of the summer remain a short bearing cluster shoot, all the portion below *c* being, however, bare ever afterwards. It is certainly a good class of shoot, and should not be suppressed in orchard-house pruning, and rarely, unless a foreright, in out-door work. It will not grow strongly in any case and is, therefore, valuable for bearing next season. It has but the single defect of an inch of unfruitful wood. Not to notice it would be to leave amateurs in ignorance of what the numerous "cluster" look like after the season is over.

7. THE FRUIT SPRAY (*fig. 7*).—This class is included by Dubreuil under the head of "proper fruit shoots," which he says are "from 4 inches" in length; but from other specimens which were photographed for this work, and which were taken from strong-growing trees, it was seen how this type passes, like the others, into Class No. 3 whenever the blossom-buds are arranged in groups with a leaf-bud between them. It is the fact of the single blossom-buds, in which No. 6 alone participates, which marks the distinctive character of this beautiful class. 8 also has only single blossom-buds, but it has no terminal leaf-bud, which No. 7 has; 7 has, therefore, been promoted to the honour of being a separate type, and it occurs very frequently on healthy and well-managed trees, both in-doors and in the open air. This class having a terminal leaf-bud will, besides bearing, extend, and having sometimes a latent bud at the base may, by judicious summer-stopping, become double, in which case generally shoots of the same character will be formed. This is a valuable disposition in this class, and for many reasons it should be retained instead of being suppressed, as it often is. 5 and 7 are essentially orchard-house shoots, being developed more readily under the somewhat artificial treatment therein practised.



Fig. 7.

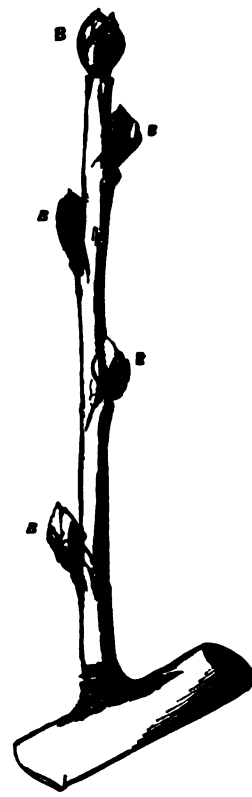


Fig. 8.

8. BARREN SPRAY. *Chifon* of Dubreuil (*fig. 8*).—An unsatisfactory class, indicating neglect or a bad habit of the tree itself. There is much difference of opinion among long-pruners how to treat this class, but if retained they should be cut to above the lowest fruit-bud. They occur in orchard-house bush trees frequently, and show defective pruning, because by stopping they would probably have passed into some other type, or, at the worst, dried up entirely. When very injudiciously managed a bush tree may soon become crowded with them, some being much longer than the specimen selected, and others having a bare portion below them. All this arises from neglecting to observe that there is no terminal leaf-bud, so that the shoot is blind.

These eight classes of shoots are all that we may look to find in ordinary cases. Wherever there seems any variation

from them it is because they are passing into another form; but even this can be readily recognised, and need not cause any perplexity. 1 and 4 are the only pure wood shoots, for the others are more or less all fruit-bearing. It is to be hoped that rules for pruning are simplified by means of this classification. All may not be of one mind as to these rules, but the general principles here laid down were, of course,

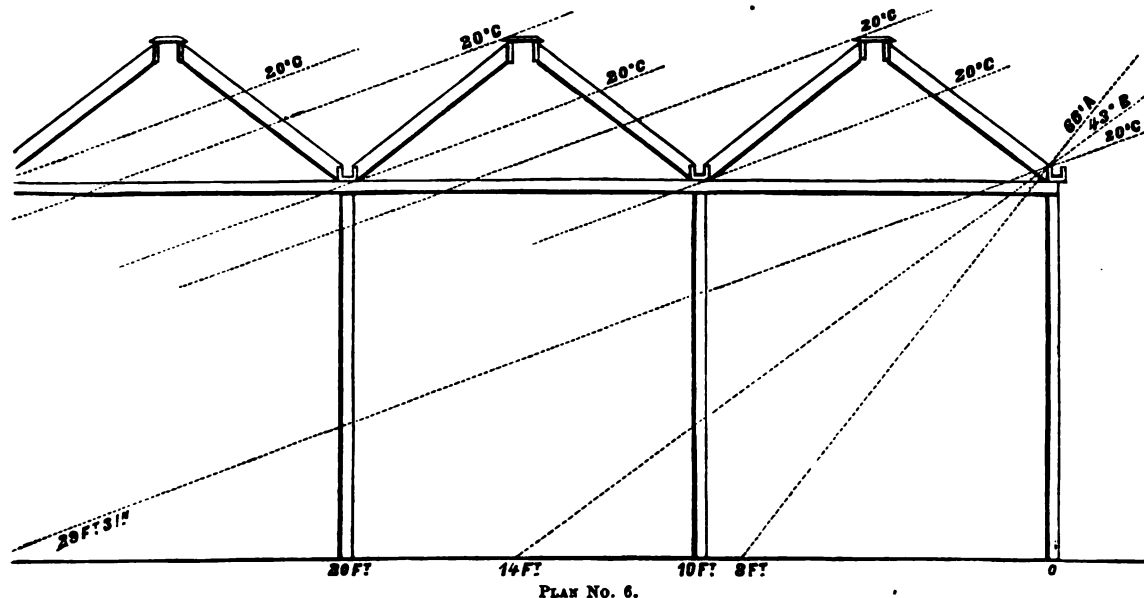
the first thing requiring to be settled. It may be added here, that perhaps the very best modern authorities on these matters have given their approval to this arrangement of the shoots. One great difficulty was to render appropriately the names by which some are known on the continent; another was the want of precision in the current horticultural terms.—T. C. BRÉHAUT, *Richmond House, Guernsey.*

CONSTRUCTION OF A PINE STOVE.—No. 3.

HAVING, as I think, shown that the atmospheric heat required to ripen Pines in winter cannot be maintained in narrow span-roofed houses without employing such a large surface of piping as must materially injure the plants, I shall leave the further consideration of this shape with the remark—that our desire should be to adapt the house to the use for which it is required; and that, though this shape is not fitted for winter forcing, it may still be admirably adapted for summer orchard-houses. In winter our only source of heat is hot water, and we require economy in its use as much for the health of the plants as on account of the cost of production. In our fear of losing it we build brick sides to our houses, thereby suffering loss of light, for which nothing compensates. Can we not build better, that is, lighter, houses without losing heat?

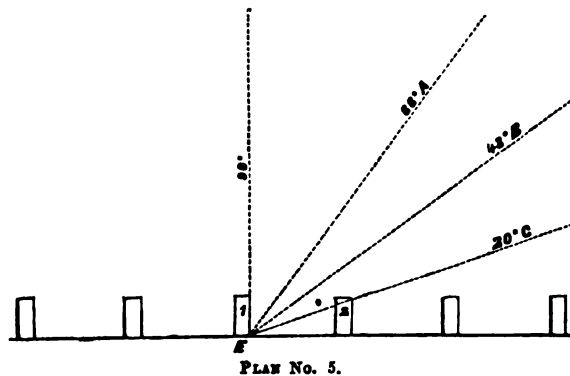
Mr. Speechly, writing in 1790, says—"The sun is the primary cause—the very life and soul—of vegetation." He

also tells us—"In Holland it is customary to begin to force Vines in November, in order to have ripe Grapes early in the spring. In these frames, used for winter forcing, it is found necessary that the glass frames should be in an almost perpendicular direction. They are about 5 feet wide at the bottom, and at the top about 3 feet; the height of the Vine wall, to which the frame is affixed, about 10 feet." I therefore propose to make the sides of my house 10 feet high. The advantage of this increases as the angle of the sun's rays decreases, the direct sunlight shining so much further down the house, particularly from the south and west sides. Plan No. 6 will show this. Mr. Speechly says—"The angle of the sun's rays at the equinox is 43° ." I have taken this as a basis. At midsummer the sun is 23° north, making its altitude 66° ; in winter 23° south of the equator, making it 20° . In this I may be wrong; but it is the principle I wish to show, and it will serve for this purpose.



I do not know any plan that will better tend to increase the light during our dark months; and I think that double glazing will enable me to retain the heat. Certainly 10 feet of double glazing will not cost more than 5 feet of brick wall. I would have the inner portion made so that it could be taken down as soon as the March winds were over, merely employing it as a means of preventing what I may call too much unauthorised ventilation; but some may say, You leave out the roof; can you get more light through the sides? Let us turn again to Mr. Speechly—"Vineries are sometimes built on commodious plans, of which the most elegant certainly are those which have an entire glass-framed roof, with one side descending to the east, the other to the west; the south end must consequently be glazed. But as these buildings admit of the meridian sun only at the end of the house, they are very improper for producing Grapes at an early season." From this extract I should presume Mr. Speechly intended to mean a house that had no sides. Let us treat it as such. He says the roofs descend to the east and west. In this case, when the sun was in the south its rays would fall on the rafters, as represented

in Plan No. 5, at D and E, on rafters 1 and 2. I intend running my roofs east and west, so that when the sun is in



the south it will be as shown in Plan No. 6. To avoid con-

fusion I have only carried out the lines c, as I am considering the case of a house in winter; and here you will see, when the sun is in the east or west, it will still be, as shown in Plan No. 5, which I consider Mr. Speechly was justified in calling improper. May we not all confess he was very wise in his generation? I have been as much surprised as pleased in reading his book, and shall set great store by it.—G. H.

EARTH A DEODORISER OF SEWAGE.

My attention has been directed to two letters in your Journal signed "UPWARDS AND ONWARDS," in which the writer gives much, and to some extent merited, praise to a pamphlet by Mr. Wilmot on the dry treatment of excrementitious matter. In asserting, however, that ashes are a better material for the purpose than dry earth, he has, together with Mr. Wilmot, fallen into a great error. I shall feel, therefore, greatly obliged if, as the advocate of the dry earth system, whose observations and experiments have extended now through many years, I may be allowed space in your Journal for a few words on the subject. It is so long ago as the year 1857 that I discovered that very important property of dry earth or clay, of which Mr. Wilmot makes no account whatever—viz., its capability of repeated use. I will limit my remarks to his two objections to my system. Firstly, that I recommend the use of a mechanical application of earth; and secondly, that I use earth and not ashes as the medium of removal.

Now, with regard to the first of these objections, there is no greater necessity for the use of mechanical arrangements for the supply of earth than for the supply of ashes: indeed my pamphlets indicate the simplest possible mode of applying the earth without any machinery. Almost as soon as I began to carry out this mode myself I perceived certain obvious advantages which would arise from some mechanical contrivance—advantages (I might almost say necessities), if the system should ever be adopted, as I am confident that sooner or later it will be adopted, in towns, inside houses, and in upper stories of houses—advantages in economising the use of earth, both as to smallness of the quantity to be used, and especially in the cases of schools, gaols, and asylums, and as to the certainty of its application. In conjunction, therefore, with Messrs. White & Co. I contrived, and have patented some very simple contrivances for this purpose; and although Mr. Wilmot may have seen and heard of one or two failures, as he asserts, arising from defective manufacture, those advantages of which I speak can be, and are, by mechanical contrivances secured. Without some such contrivance it is sufficient to observe that a closet is exactly what a water-closet would be without a mechanism for applying the water.

Second, as to Mr. Wilmot's other objection to the use of earth and his preference of coal ashes, I venture to pronounce it simply absurd. From the very first I have regarded my system as one not for England only, but suited to all countries; and, as I have stated in my third edition of "National Health and Wealth," it is already very generally adopted in the gaols and barracks of British India. Where will Mr. Wilmot find his coal ashes there? Where will he obtain them on the continent of Europe? And even if during the winter months in England there should be an adequate supply, what cottage or what moderately-sized house will supply enough for a large family during the summer?

The most decided objection, however, to the use of ashes is that which Mr. Wilmot himself acknowledges—viz., that the mass of excrement with ashes becomes foul and gives off a bad smell. How then can they be said to be equal in deodorising power to dry earth or clay? The truth is that ashes from their alkaline character exert a chemical action on the nitrogenous matters of this mixture, and generate, an analogous process to that of fermentation, without absorbing the gases generated; whilst, on the other hand, dry earth, from its well-known capability of absorbing manurial compounds, takes up into itself any gaseous products which through its mixture with foul substances may have been eliminated. Such mixture will give off no smell and is perfectly harmless. If the mixing, moreover, be intimately done, all offensive appearance, as well as offensive smell,

vanishes, and if in that state it be allowed to dry it may be used with equal efficacy the tenth time.—HENRY MOURA, *Fordington Vicarage.*

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

CYPRIPEDIUM LEVIGATUM (Glossy-leaved Lady's Slipper). *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Diandria.—Discovered by Mr. J. G. Veitch in the Philippine Islands. Flowers yellow, variously streaked with purple.—(*Bot. Mag.*, t. 5508.)

ARUM PALESTINUM (Jerusalem Arum). *Nat. ord.*, Aroidæ. *Linn.*, Monœcia Monandria.—Procured from near Jerusalem by Messrs. Veitch. Spathe inside and spadix dark purple.—(*Ibid.*, t. 5509.)

RAPHIOLEPIS JAPONICA var. *INTEGRIFOLIA* (Entire-leaved Japanese Raphiolepis). *Nat. ord.*, Rosaceæ. *Linn.*, Icosandria Digynia.—Native of Japan, &c. Flowers white and sweet-smelling.—(*Ibid.*, t. 5510.)

HYPOESTES SANGUIOLENTA (Blood-veined Hypoestes). *Nat. ord.*, Acanthaceæ. *Linn.*, Diandria Monogynia.—Introduced by Messrs. Veitch, it is believed, from Madagascar. Flowers pale purple; leaves dark green, veined with pale purple.—(*Ibid.*, t. 5511.)

AUCUBA JAPONICA (Japanese Aucuba).—Noticed at p. 361.—(*Ibid.*, t. 5512.)

ODONTOGLOSSUM PESCATOREI var. *SPLENDENS*.—White spotted with purple. Received a first-class certificate from the Royal Horticultural Society's Floral Committee.—(*Floral Mag.*, pl. 241.)

CAMELLIA Contessa di Gonda.—Delicate pink, with darker stripes of the same colour. At Mr. Bull's Nursery.—(*Ibid.*, pl. 242.)

HYACINTH Thorwaldsen.—Exhibited by Mr. Cutbush, Highgate Nursery. Pale blue, lobes with darker centre.—(*Ibid.*, pl. 243.)

CLARKIA INTEGRIPETALA FLORE PLENO (Double Entire-petalled Clarkia).—Flowers double, rosy crimson. Possessed by Messrs. Carter, Holborn. Handsome flower.—(*Ibid.*, pl. 244.)

ACHIMENES.—*Rose Queen*, purple. *Aurora*, scarlet. *Stella*, mauve. The two first-named had first-class certificates, and the third a second-class certificate from the Floral Committee. They were raised by Mr. A. Parsons, gardener to W. J. Blake, Esq., Danesbury, Welwyn.—(*Florist and Pomologist*, iii., 89.)

THE PLEASURE-GROUNDS OF PARIS.

THE Botanic Gardens, like many other venerable places, have been preserved with great expense, as an illustration of the ease and tranquillity with which public business was executed in old times. Add to these the gardens of the Luxembourg and Tuileries, all three of which have lately undergone some improvements, and we have the gardens of Paris as furnished by the State. On the arrival of the Emperor in 1852, knowing the useful effect of transforming the many resorts of vagabonds and strongholds of revolution, he determined to embellish the city, improve its health, and give employment to the dangerous, if not working, thousands of the Parisian populace; losing no time, he appointed Baron Haussman, as prefect, to direct and carry out his plans. He proposed the improvements for the consideration and sanction of the municipal council, and ordered that the money received at the octrois, which amounts to about 180,000 francs per day, should be expended for this purpose; he appointed a staff of officers to conduct, and assistants in every branch capable of directing, the practical operations. The result is incredible: it surpasses even his own anticipations. Never have such improvements been effected in the same time in any other city in the world. Parks, promenades, gardens, lakes, fountains, bridges, temples, and boulevards of unequalled beauty, have sprung up on the very spots where imagination would have called them, to replace those retreats of sickness and filth—those dens of vice and crime.

Wherever the Emperor has gathered his notions of boule-

wards, there can be no doubt but those on gardening are of English extraction, as may be traced in his first grand design—Bois de Boulogne, the most extensive, beautiful, and best designed of all the fashionable promenades of Paris: though without the fortified boundary between Auteuil and Neuilly it is certain, at no distant day, to be included within the limits of Paris.

Passing the Tuileries, crossing the Place de la Concorde, where we must not stop to contemplate its inimitable beauties, nor dwell too long on the different phases in which history will represent it to us, and quickly going along the grand avenue of Champs Elysées, every step of which presents some fresh beauties, we find some well-designed plots filled with rare plants in out-door culture, such as *Erythrina ruberrima*, *Ficus elastica*, *Wigandia urens* and *caracasana*, *Nicotiana wigandioides*, *Begonia fuchsoides*, *Aralia papyrifera*, *Caladium odoratum* and *esculentum*, *Musa rosacea*, *Coleus marmoratus*, *Andropogon formosus* and *halapensis*, *Canna zebrina*, hybrida, *Solanum marginatum*, robustum, and *capsicastrum*, &c. On arriving at the Arc de Triomphe, that masterpiece of art, we stand in the centre of a circle which terminates the avenue, and from which radiate twelve avenues, such as are only to be found here. From here, ten, fifteen, or twenty minutes will suffice to conduct us to the following entrances of Bois de Boulogne:—Portes Maillot, Sablons, Dauphine, and Grille de la Muette. Arc de Triomphe once passed, we see, opening in front, a little to the right, three broad avenues; to the left the Avenue of St. Cloud, formerly Avenue of Charles X.; between this and the route to Neuilly lies the Avenue de l'Impératrice, attracting the attention by its grandeur and animation, and by the beautiful landscape with which it is surrounded and terminated. This avenue, which is the most direct from the Tuileries, was opened in 1855; its length is nearly a mile, width about 110 yards, comprising a central road for carriages of 17½ yards wide, an alley on either side of 13 yards, one for pedestrians, and the other for horsemen, with two belts of grass of about 30 yards each, in which have been planted some fine groups of Coniferae, &c., also some beds filled in the summer months with the choicest plants; finally there are two lateral roads of nearly 9 yards each for the service of the neighbouring proprietors: these are enclosed by a very rich railing of one uniform model. No habitation can be constructed at a distance of less than 12 yards from the railing. On passing along this avenue we perceive, towering sternly above the Bois de Boulogne, Mont Valerien, one of those formidable forts which were constructed by Louis Philippe, while a little to the left may also be seen the ridge of St. Cloud, Bellevue, and Meudon.

We now enter Porte Dauphine, which, although not so large as the Grille de la Muette, and deformed a little by the appearance of the fortifications, though hidden as much as possible by trees and shrubs, is, nevertheless, a most elegant and richly ornamented entrance. This once passed, we find ourselves in the Bois de Boulogne, surrounded as it is by villages and castles, most of which recall a great number of historic events and literary anecdotes. In the early times of the French monarchy this formed part of the ancient forest of Rouvray, taking its name from the *Quercus robur*, which at that time was the predominant wood here.

It also appears that at that period Passy, Auteuil, St. Cloud, and Meudon, were comprised in this forest of sessile-fruited Oaks, which seems to have been inhabited for the first time towards the end of the sixth century, a few huts having been erected by the peasants along the sunny banks of the Seine; and they afterwards succeeded in clearing some of those virgin wastes, and there planted the Vine. The name given to this small assemblage of cabins was Nijou (in Latin Nimeo). At a later period the extensive wilds which surrounded the village of Nijou were enclosed, and keepers were placed there to feed and protect the game. At this time the modern Bois de Boulogne received the name of Rémise du Roi. About the fourteenth century this wood became the resort of robbers and adventurers. So infested had it been that the convoy sent by Charles V., with the baggage of Duguesclin, was here attacked and pillaged in open day.

Louis II. gave the forest of Rouvray to, and therein erected a mansion for, his physician, James Cottier, but of this the parliament stripped him on the decease of the king. It was about this time that the name Bois de

Boulogne seems to have been given to a portion of it. Afterwards Francis I., passionately fond of sport, appropriated it to game, and built the castle of Madrid, where Henry II. gave brilliant fêtes. Charles IX. constructed, in his turn, a residence, which has since received the name of Castle de la Muette, in which he used to reside in the hunting season; it was afterwards frequented by Louis XIII., but Louis XIV. abandoned it for Versailles. It became again the haunt of the profligate Louis XV., who greatly improved it. In the beginning of the eighteenth century the Regent embellished La Muette, which became the favourite resort of his sister, the Duchesse de Berri. In this castle Marie Antoinette slept on her arrival at Paris, in awaiting the preparation of the Tuileries. It was at this place, also, towards the end of the eighteenth century, that the first horserace was run in France; and it was here the first balloon experiments were made by Pilatre du Rosier, who made an ascent accompanied by the Marquis d'Arland. But the revolution dispersed the aristocracy and literati, which then peopled the environs of the Bois de Boulogne.

Napoleon I., wishing to develop its natural beauties, commenced a grand project, but his intentions were frustrated by the belligerent visit of English, Russian, and Prussian armies. At the second invasion the English army encamped here, and cut down, burned, and built their tents with Oaks which Francis I. had planted. Their camp extended from Ranelagh to Porte Maillot. The Russians and Prussians did the same at different other points, so that when the allies retired the Bois de Boulogne presented a sort of waste, covered with débris and ashes. A few trees near the cross of Catalan and Porte Maillot alone escaped the destroying hand of these unwelcome visitors. Louis XVIII. did all he could to efface the too glaring traces of these lamentable disasters, and replanted it, and Napoleon III., for reasons already cited, and from his long sojourn in England, knowing the importance of public gardens, determined, in the beginning of 1852, on giving to Paris one of those public promenades which are the pleasure and pride of London.

From 1848 to 1852 Bois de Boulogne formed part of the State demesnes. By an Imperial decree of the 2nd June, 1852, it was ceded to the city on the following conditions:—

- 1st. To defray all expenses.
- 2nd. To expend within four years £80,000 in its embellishment, and to submit to the Government the plan before executing it.
- 3rdly. To preserve for the purpose intended the lands conceded.

Hardly was this decree made known when the city took possession, and commenced the work. The laying out was given to an able landscape gardener, M. Varé, who, acting on the indications and ideas given him by the Emperor, traced out a plan which was adopted without any modifications, and at the completion of the work meritoriously received the "ribbon" from the hands of the Emperor.

M. Varé has since been replaced by an engineer, M. Alphand, and a head gardener, M. Barillet, to whom are entrusted the management and formation of all the public gardens of the city of Paris, and by whom have been formed the numerous minor gardens which adorn this capital, none of which, however beautiful, as yet make any approach to the Bois de Boulogne.

There is at this moment in course of formation the vast Forest of Vincennes, which, though in extent, fertility of soil, and magnificence of its trees, far surpassing Bois de Boulogne, still is, owing to its position, never likely to become a favourite place for the fashionable aristocracy. Charenton and Butte de Montmartre are undergoing similar transformations. Bois de Boulogne has cost many thousands and many years, but it is a lasting monument, and will long stand at the head of works of this sort.

The principle said to have been applied here was to take a little from all, without destroying any. Wherever existing obstructions worth preserving came in the way, the visitor has been sent gracefully round. In this way many fine old trees have been spared from the woodman's axe, while no one will contest the charms given to this picturesque place by the preservation of the tower of the ancient and famous monastery of Longchamp and its neighbouring windmill. The Cross of Catalan, associated with dark tragical remembrances, stands facing one of the entrances to the

garden Près Catelan, which has been devoted to many kinds of attractive amusement; from 1855 till 1859 it was the scene of theatrical displays, for which a kind of rustic, uncovered theatre was constructed, where all the charms of flowers were more advantageously shown by the aid of skillfully arranged lustres. This has since been replaced by the Concert Musard, in addition to which several military bands play here two or three times a-week in summer.

The name "Catelan" is given it from an event which occurred here in the reign of Philippe le Bel. Catelan was one of the most celebrated troubadours of his time, attached to the court of Beatrice de Savoie, wife of the last Raymond Beranger, Comte de Provence; his reputation became so great that Philippe demanded, as a favour from Beatrice, to send him to his court. On his arrival at the Tuileries, Catelan, not finding the king, who in the meantime had retired to Poissy, was obliged to follow him thither. Philippe, fearing the danger of allowing Catelan to traverse the forest of Rouvray alone, despatched an escort of his guard to meet and conduct him. But Catelan, having unfortunately spoken of the rich present which Beatrice entrusted him with for the king, the chief of the escort assassinated him on the spot where now stands the pyramidal monument. But the chief, on opening the small coffer in which the supposed treasure lay, to his great consternation only found therein a little bottle of some new perfume. The chief returned to Poissy, and told the king he had not seen Catelan; but in a short time after, on his appearing at court, he was detected from having on him the perfume entrusted to Catelan, and was sent to the guillotine.—WILLIAM KELLY, *Au Fleuriste de Paris, a la Mulette, Passy, Paris.*—(*Irish Farmers' Gazette.*)

(To be continued.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE weather is now very favourable for carrying on the various operations of planting and sowing. When any main crops have failed, more seed should be immediately sown. Where they have partially failed procure plants, if possible, to fill up. Now is the time to destroy slugs; late at night and early in the morning they leave their hiding places, and may be destroyed by thousands with quicklime, which should be strewn over every part of the garden several evenings or mornings in succession—in the morning by three or four o'clock, and at night not before nine. By persevering a short time a garden may be entirely cleared of this pest. *Beet*, thin the plants to a foot apart while they are small, fill up vacancies with those that are drawn out, they will produce plants equally good with the others. If the first crop has altogether failed, it is not yet too late to sow another. *Broccoli*, make another sowing of both early and late sorts, the former to come in in October and November, the latter late in the spring. *Cabbage*, earth-up those that were planted early in the spring; tie up the leaves of a few of the most forward of the autumn-planted, to cause them to form hearts for early use. *Capsicums*, plant them out on a warm rich border, water them during dry weather throughout the season. *Chervil*, make another sowing, and also of American Cress. *Celery*, continue to prick out seedling plants. In planting out a second time, before finally transplanting into trenches, make a bed about 4 inches thick, of equal parts of rotten dung and loam on a piece of hard ground, so that at the time of planting the whole of the earth may adhere to the roots after the spade is passed between each of the plants. *Cucumbers*, particular attention is required to keep the plants in a bearing state. Stopping the shoots is the most important point to be attended to, the plants to be looked over every fine morning about an hour after the frames have been uncovered and the plants have had a little air. *Endive*, sow a little seed for an early crop, it is useless to sow much as it will soon run to seed. *Kidney Beans* sown in pots or boxes, plant out on a warm border in rows 2½ feet apart. Another sowing should also be made. *Leeks*, make a sowing to plant out for winter use. *Lettuce*, plant out a few about once a-week, thin the plants in the early seed-bed to a foot apart, and if any were sown on the Asparagus-beds they will require the same attention. *Mushrooms*, woodlice are somewhat troublesome about the beds at this season, the

best traps to catch them are boiled Potatoes put into a flower-pot and covered with a small piece of moss, the pot to be then placed on its side, by examining it every morning and emptying the live stock into some hot water, their numbers may in a short time be considerably diminished. *Owens*, the weather is now favourable for planting out some of the autumn sowing. Avoid covering any portion of the bulb. *Potatoes*, earth-up the early crops, and those which have just made their appearance above ground to have the hoe run between the rows to keep down weeds. *Scarlet Runners*, the sowings of these and of Haricot Beans should be attended to without delay. Thin out seedling crops while the plants are small, and if it should be necessary to stand amongst them, let the soil be afterwards loosened-up where it is trodden.

FRUIT GARDEN.

Espalier fruit trees demand prompt and peculiar care at this season, favoured by the weather a rapid and healthy growth has been encouraged. The removal of superfluous shoots may now be effected with propriety. Peach, Apricot, Plum, and Pear trees alike require frequent attention. Much advantage may be gained by judiciously stopping some and favouring the extension of others, by the removal of unnecessary shoots and those too close together. Persevere in the destruction of insects on fruit trees, in order to afford the young shoots a fair chance of making healthy growth.

FLOWER GARDEN.

Now is the time to establish a firm and even sward or lawn, the pride of British gardens; the roller and the scythe will be in frequent request, and much labour is involved in these operations properly carried out. See that the edgings hitherto neglected are put in order for the summer, do not edge beyond the original boundary, and keep the walks filled with gravel. Let the roller be passed frequently along the edges, in order to level them down to the walk; this takes away the harshness of the outline. See that all Rose trees have due attention as to disbudding, stopping, &c. Watch the buds inserted last season, rub off those on the stock in a progressive way, and let all Roses, whether standard or dwarf, be well top-dressed with good rotten manure, if not already done. Where Roses are infested with the grub it will be necessary to go over the plants frequently to destroy this pest. Green fly is also very troublesome at this season, a good washing with the garden engine on two or three successive evenings will greatly assist in getting rid of these destructive pests. In this department the next few weeks will be devoted to filling up the flower-garden beds and clumps intended for the summer and autumn display, and now a change has taken place in the weather every exertion should be made to get the planting-out completed with all possible dispatch. As Crocuses and other bulbs will now be nearly over, patches of biennials which have stood the winter may be placed close beside them. Select a shady border and give it a good dressing of rotten dung or leaf mould, slightly forked in, for planting with the runners of the different kinds of Violets for forcing. The Neapolitan is the best for frames or pots, and the runners will now be found in a proper state for removal. Plant them 8 or 10 inches apart, water them abundantly in dry weather, and pinch off the runners as they appear. If the soil is rich and open they will grow into stout bushy plants by the autumn, and may then either be potted or planted in pits for forcing.

GREENHOUSE AND CONSERVATORY.

As the New Holland plants go out of bloom their seed-pods should be picked off, the shoots cut back and arranged in the form most favourable to secure compact growth, placing them in an airy part of the greenhouse until they fairly start into growth. When the buds have fairly started will be the proper time for shifting such as require more pot-room, as they can then be kept somewhat close for a fortnight to encourage free root-action without incurring the risk of the buds breaking scantily. Look well to the stock of plants for summer and autumn decoration, and do not allow them to sustain any check through want of pot-room or carelessness in watering. Fuchsias for late bloom must not be kept too warm, but should be placed in a moist shady house, where they will grow much more freely than in a high temperature.

STOVE.

The plants in this house will now be growing freely, and will require frequent attention as regards stopping and training. Give them a proper amount of pot-room, and afford them all the sunshine they will bear without scorching, with a moist atmosphere, admitting air freely on mild days; also afford them sufficient space for the perfect development of their foliage. Go over creepers frequently, so as to regulate their growth and prevent confusion, which, without attention, soon happens. Syringe and shut up early on the afternoons of fine bright days, and be as sparing as possible in the use of artificial heat.—W. KEANE.

DOINGS OF THE LAST WEEK.

DELIGHTFUL warm showers have set all vegetation rapidly growing, and the change on the pastures and corn fields, as well as on most garden crops, is astonishing. It will give a nice help to Strawberry plants now coming into bloom, and as for mowing, a man can do double what he could do in a dewless morning, and the ground too hard and dry for even a roller to squeeze down the little worm and other heaps.

KITCHEN GARDEN.

Very much the same as in previous weeks. Gave a little salt to Asparagus and Sea-kale. Sowed more Turnips, Peas, and Beans. Planted out Scarlet Runners. Pricked-out a lot of Onions sown late in autumn, to yield large bulbs before those sown in spring. Planted more Cauliflower; sowed successions of Lettuces, Onions for salads, Cabbage for summer, &c. Potted Chilis, Capsicums, Tomatoes, thinned out leaves, and some shoots of Cucumbers. Dug up Potatoes in frames, and placed the tubers in dry earth for use. Cleared off the soil, and some 18 inches of the tree leaves that were beneath it. Stirred up what was left and added fresh litter and short grass, so mixing that the grass would give moisture enough to the litter, and thus keep on for a long time the process of combustion; then replaced the leaves, making a bank back and front for the frames to rest on, and filled at once with soil for Cucumbers and Melons. These beds will last for a long time, and when the soil is removed and the bed forked-up they will do for cuttings late in autumn. A little practice enables us with such a rough system to avoid over-heating and great changes of heat and cold.

Mushrooms.—We have just spawned our last piece in-doors on an elevated platform. At this season, do what we will, the woodlice will annoy us inside the shed-house, and especially if the bed is made on the floor; if on the shelves, we are much less troubled with them. Even after scalding and trapping numbers of them, we have been obliged to set pots and hand-lights firmly over good patches, if we did not wish to see them holed and scraped in the morning. We are scarcely ever troubled with them during the winter months. We generally smoke the Mushroom-house with burning sulphur every autumn, and that must leave few alive. No doubt they are introduced along with the fermenting material. We have just made up our first piece in the shed out of doors. The material consisted chiefly of long litter from the stables, with a few droppings and tree leaves for want of something better. This had been thrown together and watered to cause it to ferment. It was turned and watered again, the object being not to waste the straw too much by making it too wet. When used the other day it had settled down into a half-decomposed, dry, cakey material. This was well broken and packed together some 16 inches deep, and ere long an inch of horse-droppings will be spread all over. The advantage of the dryness is, that a little manure water can be given when the bed seems to require more nourishment. Over-dryness will starve the spawn, over-wetness will rot it and cause it to exhaust itself in thickish threads. As instanced the other week, if we had thought of it in time we might have saved some of this trouble. Part of the bed made last season, and which bore in summer and autumn, was left after we had wheeled two parts or more out for manure. We believe the rest would have done well too if we had left it. The material was dry rather than wet. A watering with warm water and a slight covering of rough hay until the weather became warm, has caused the

piece to yield a fine lot of Mushrooms. This instance shows, that if the bed be dry the spawn will not suffer from cold. From about the end of last October, when the house Mushrooms were coming in, this shed-bed had been exposed to the colds of winter, with little or no protection except from wet, and now it is coming quite thick again. This shows the importance of not having the material of the bed too wet, nor yet too hot. Spawn will keep long enough if dry. It is quite a mistake to make so much ado about having it only in the autumn after it has been fresh made. We have had fine beds from spawn kept on a latticed shelf in a dry shed for five years.

FRUIT GARDEN.

Chiefly employed in regulating, topping, thinning, disbudding, or dis-shooting Peaches, thinning Grapes, arranging and stopping shoots, planting-out Melons, &c. Some wet dull days, as Wednesday, were very suitable for thinning Grapes, and doing other work under glass.

ORNAMENTAL DEPARTMENT.

Besides keeping the conservatory neat, potting stove and greenhouse plants, the chief work has been potting late-struck Verbenas, and other bedding plants; dividing *Dahlias*, and planting them out in a trench in the kitchen garden among light, rich material, to be afterwards moved with good balls, giving a pot, and the shelter of the Peach-house to those that were rather late, if of the best florist kinds. Pricking-out lots of other things in beds, as *Ageratums*, where they could have more room, but more generally turning them out in bunches, so that they may require little trouble in watering until we are ready for them. Hardening-off by pretty full exposure plants in earth-pits, &c., and getting the ground well dug and pulverised, turned and returned for their reception. Did our ground please us, most likely we would have turned lots of things out this week, but we got behind with all this work in spring, and we would prefer delay in planting-out to planting-out in beds not sufficiently stirred and pulverised. Most of our bedding-out plants are growing in temporary beds, where they are without pots, and they will suffer but little in the removal. The ground before the rains was also too dry for us to plant, without sacrificing too much of our water. We expect to have a few plants in their places before this is in print; but as a general rule we have never gained much by planting out before the 18th or the 20th of the month. If planted much sooner here the plants require less or more protection, and we would prefer giving it when they are in earth-pits, and where, from not being in pots, they require but little water to keep them healthy. As a general rule, the bulk of bedding plants will thrive afterwards in proportion to the sunbeams dug down into the soil; and if time can be given, the soil can be well warmed if the heated surface is frequently turned in. The vane pointing so much to the north, makes us also a little cautious.—R. F.

TRADE CATALOGUES RECEIVED.

W. Bull, King's Road Chelsea, London.—*Retail List of New, Beautiful, and Rare Plants.*
Groenewegen & Co., Amsterdam.—*Catalogue of New and Rare Plants.*

COVENT GARDEN MARKET.—MAY 13.

The supply is fair, but not more than equal to the demand. Good dessert Oranges are more scarce. A large cargo of new Potatoes, and of good quality, has arrived from Lisbon. They sell at from 3d. to 5d. per pound. Of old Potatoes, the stock on hand is very heavy. Flowers chiefly consist of Orchids, Pelargoniums, Azaleas, Mignonette, and Roses.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	0	4	0	Mulberries	puant	0	0	0
Apricots, Green, pottle	1	0	1	6	Nectarines	do.	0	0	0
Cherries	lb.	0	0	0	Oranges	100	0	14	0
Chestnuts	bush.	14	0	20	Peaches	do.	36	0	45
Filberts	100 lbs.	40	0	0	Pears (Kitchen)	do.	2	0	0
Cobs	do.	50	0	0	.....	do.	0	0	0
Gooseberries ..	½	0	7	0	Pine Apples	lb.	6	0	12
Grapes	lb.	8	0	14	Plums	½	0	0	0
Lemons	100	5	0	10	Strawberries	do.	0	6	1
Melons	each	0	0	0	Walnuts	bush.	14	0	20

VEGETABLES.

	n.	d.	s.	d.		n.	d.	s.	d.
Artichokes.....each	0	4	0	6	Leeks.....bunch	0	3	0	6
Asparagus.....bundle	2	0	0	0	Lettuce.....per score	1	0	2	0
Beans Broad.....sieve	0	0	0	0	Mushrooms.....pottle	1	0	2	0
Kidney.....100	1	0	1	6	Must. & Cress, punnet	0	2	0	0
Beet, Red.....doz.	3	0	4	0	Onions.....bushel	5	0	7	0
Broccoli.....bundle	2	0	3	0	pickling.....quart	0	4	0	2
Brussels Sprouts.....sieve	0	0	0	0	Parsley.....sieve	1	0	1	6
Cabbage.....doz.	1	0	2	0	Parsnips.....doz.	0	9	1	0
Cauliflowers.....100	0	0	0	0	Pea.....quart	7	6	0	0
Carrots.....bunch	0	7	0	10	Potatoes.....bushel	2	6	4	0
Caiflower.....doz.	2	0	6	0	Radishes doz. bunches	0	6	1	0
Celery.....bundle	2	0	3	0	Rhubarb.....bundle	0	3	0	6
Cucumbers.....each	0	6	1	6	Savoy.....doz.	0	0	0	0
Endive.....score	0	6	3	0	Sea-kale.....basket	1	0	2	0
Fennel.....bunch	0	3	0	0	Spinach.....bushel	1	0	2	0
Garlic and Shallots, lb.	0	8	0	0	Tomatoes.....sieve	0	0	0	0
Herbs.....bunch	0	3	0	0	Turnips.....bunch	0	3	0	6
Keweradish.....bundle	2	6	4	0	Vegetable Marrows doz.	0	0	0	0

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

ILFORD HORTICULTURAL COMPANY (*J. Curwen*).—To secure the allotment of shares you should send 10s. for each share you intend to take addressed, to "The Ilford Horticultural Company, London and Westminster Bank, Lothbury, London." No notice will be taken of any application that does not contain the required remittance.

EARLY PEAR.—Messrs. Sutton, of the Royal Berks Seed Establishment, Reading, inform us that they have made several sowings, in different situations, of each of the new early Pears advertised in *THE JOURNAL OF HORTICULTURE*; and that they find that "Sutton's Ringleader" came into bloom several days before either of the other new sorts, though all were sown on the same day, and under exactly similar circumstances. From their observations during last season they have confidence that the podding and ripening will be still more in advance of all others.

DISEASED GRAPE (*C. W. W.*).—They are very much rusted, but some of them are also spotted. The rust, as stated by Mr. Fish in "Doings of Last Week," is usually attributed to the berries being touched with hot hands or head; but we question whether it is not often caused by sudden exposure to cold currents of air. The spot is a gangrene usually caused by the roots being too cold, or having descended deeply into the subsoil.

GREEN FLY ON PEACH TREES (*A Subscriber, B. Stoke*).—Syringe your Peach trees every other day with tobacco water for a week or so. This should be done early in the morning, or after three in the afternoon. You may always syringe the trees with perfect safety as soon as the fruit is set, providing the tobacco water is not too strong. Use it at the rate of 1 lb. of tobacco to eight gallons of water. If you syringe your trees, say on Monday, Wednesday, and Friday with tobacco water, syringe them on the other three days with clear water. If this is well done we think the trees should be quite clear from these pests in one week. Your plan of dusting the Gooseberry trees is very good, and we often adopt it with good success. We do not think it would have the desired effect on the Peach trees. We do not think the dust would injure either the tree or the fruit. There will be no harm in trying it; if it did no good it can be easily washed off again with the syringe.

INSECT ON VINE (*F. R. Reeves*).—It is the mealy bug (*Coccus adonidum*), one of the worst of pests. Brush with a very hard brush carefully, so as to leave no part untouched, every stem and branch, after which thoroughly paint them with the following mixture:—Soft soap, 2 lbs.; flowers of sulphur, 2 lbs.; tobacco, 1 lb.; and a wine-glass of spirit of turpentine. Mix the sulphur, turpentine, and soap into a paste with warm water; boil the tobacco for an hour in a covered saucepan in some more water, strain it, mix it with the soapy mixture, and then add enough water to make five gallons. More tender plants can only have their stems and leaves sponged with water at a temperature of 115°, frequently, and so long as a single insect can be detected.

INSECTS (*H. T.*).—The insect, of which you sent a multitude, is the minute *Lepisma saccharinum*, which is generally considered to feed upon decaying vegetable matters, and consequently not to be injurious to growing plants. The remarkable habit of assembling, in such vast myriads, and in masses, is well known. (*Col. H. W. Bunbury*).—The beetles sent are the *Otiorynchus variator*, a most destructive kind of weevil. The best way to get rid of them is to lay a sheet beneath the trees which they attack, and then wait till after nightfall, when the beetles will have mounted the branches, which must be shaken, when the beetles will fall, and be easily seen on the sheet.

—W.

VASES FOR CONSERVATORY (*Haselbourne*).—We think your vases for such a place should be from 20 to 28 inches in diameter, and from 3 to 3½ feet high. You will find all kinds in the Marble Lane Road, and elsewhere.

USE OF PUTTY IN GLAZING (*A. Q.*).—As yet we have found nothing better than good putty for glazing. We have no faith in soft greasy putty for keeping large squares secure. Putty on the other hand that is fresh made, though of good materials, is only fit for patching. If made and used a twelvemonth before using it will stand all the better. The only way that we know of for securing good glass is to give a good price. Some people boast of purchasing at five or six farthings a-foot, and then grumble when they have smashed. So far as our own experience goes, most of the cracking of glass proceeds from light glazing, and this is one reason why fixing without putty by means of screws and bits of India rubber, &c., has not hitherto answered well. If loose-screwed the glass will rattle and break, if firmly screwed there is apt to be expansion and breakage. We have had some half-dozen or more square in an orchard-house cracked this season. They were along the front of the house, a line 12 inches wide, in squares 20 inches long, placed closely end to end. We expect that in time we shall lose the most of the row. Had we merely put a thin card or paper between square and square to allow of expansion, instead of putting them closely end to end, we do not believe that we should have lost one. It is just some of these little matters that are of so much importance, and therefore these few cracked panes may be of use if they prevent others making the same mistake. As to putting the laps, there can be no objection to that, but they so far obscure light, and in an orchard-house would demand extra care in ventilation. If the laps are not more than from one-eighth to one-quarter of an inch, and the glass is put on according to the bend, there will be very little space at the laps, and if the roof is not very flat there will be no great amount of moisture lodged between the laps. We ourselves have had very little breakage from unputted laps. We have seen whole rows cracked from top to bottom of a sash, where the laps had been glazed and pieces of the putty had fallen out. We therefore do not advise this extra expense, unless for houses where a high temperature is wanted. We know a great deal of what light glazing will do. We told a friend last season that he was glazing too tightly, and he says now he has lost a fourth. There are some things about good putty that we cannot make out. Last season some sash-bars got as rough as dried mud, whilst bars beside them were smooth and firm.

CUCUMBER-HOUSE (*J. L. S., Cornwall*).—We have not the slightest doubt that your Cucumber-house, 6 feet wide, 7½ feet at back, and 4 in front, will answer admirably, and it is much the same as we use; but we have as little doubt that a house 10 or 11 feet wide, with a span roof, and a bed on each side, would answer better, but it would cost more for heating. There is nothing original in your iron trough, 6 inches deep and 2 feet wide, covered with slate, for bottom heat. It would be cheaper, and answer your purpose quite as well, if the trough or tank were 1 or 1½ inch shallower, and even then the water need never come within half an inch of the top. You would need to surround and cover this tank with 3 inches or so of broken bricks, stones, or cinders; it would then matter little whether you grew your Cucumbers in pots, or in beds in the usual way. Both plans answer well, and from 3 feet in width of soil is quite wide enough for Cucumbers. We seldom give them so much. With such a covering for your tank it will be advisable to have your air-heating pipes a little lower than the tank, so as not to affect the covering of the tank, and for winter work we would advise either two 4-inch pipes, or three 3-inch pipes, for that purpose—in fact, if you contemplated no covering for the glass, we would prefer three 4-inch pipes. It is much against Cucumbers in winter to have the pipes very hot in cold weather. If your house is to put up we would advise you to think of a span. The heating, and the glass and wood, would cost more, but the bricks would cost less. Your proposed house will, however, answer very well. Such a house will not only do for stove plants, but also make a good propagating-house. We heat our pit, of similar size, by two 3-inch pipes below and two above, but there is not enough of heating power above for winter. Round our pipes we pack some rough rubble, and then close gravel, on which we place the soil. We can send moisture among the gravel, &c., when we like by drain tiles set upright. This we consider cheaper and simpler than heating by troughs, but we have nothing to say against trough-heating. We presume you know all about having a moist atmosphere in your house, which may easily be procured from the tanks for top or bottom heat. If your tank had been about 3 feet in width we would have made it do for top and bottom heat. A small saddle-back or conical boiler will do all that is necessary.

LILIUM WEAKLY (*W. G. Longton*).—Your best plan is to keep them growing by watering freely until the leaves begin to turn yellow; then gradually refrain from watering, and keep the bulbs in the pots in a sunny place until the autumn. It requires a strong root of *Lilium giganteum* to throw up a good flower stem.

FLOWER-GARDEN PLANS (*A Young Scotchman*).—We do not think that your centre of curves and circles corresponds with the four simple groups at the sides. We think these four groups would be as well without the central oval. We have no doubt, however, that the whole would look well when planted, and, according to your plan of balancing the outside clumps of the groups, we do not see how you can improve it. The *Perilla*, in the spaces you mention, would do well if kept low. The alternating with silver and golden-edged *Geraniums* is good. (*Ada*).—Although there is a roominess round your four circles, 8 and 9, they rather spoil the regularity of your plan. We do not think that planting all the eight beds round the centre the same, with lines of five colours across, would be any improvement; the grass will interrupt all such lines. We would rather pair them, and give each pair a broad band of a contrasting colour. Thus, as yellow will be the outside of the central circle, we would fill two crossed beds with yellow, and broad purple edgings; two with purple, and whitish edgings; two with scarlet, and white edging; and two with blue and pink. Then do as proposed with 6 and 7; but edge 10, 10, wholly with *Lobelia Paxtoniana*, and 11, 11, wholly with *Lobelia speciosa*. This will be much better than breaking up the edging. (*Cantianus*).—We could not improve upon your plan, or the style in which you have arranged it. We think you would please yourself better if, instead of making your two square groups with a walk between them, you made each group complete in itself. If both groups were planted with similar colours it would look well. Mere variety will not make up for simplicity. Your crossed clumps, now, such as 7 in one square, and 7 in the other, are too far apart. Just take some coloured wafers, and try the following:—Do as you propose with 1, 1, and 5, 5, but balance 9, 3, and 5, 5; 3, 2, and 2, 3; 6, 7, and 7, 6; 4, 4, and so on; then use your own plan, if you like it best.

STOPPING PELARGONIUMS (*W. H. W.*).—If they are to bloom in August they must not be stopped after the close of the present month.

SCALE ON OLEANDER (*A. Bonagel Subscriber*).—The leaves sent were much infested with scale. Dissolve half a pound of soft soap in two gallons of hot water, and with this sponge both sides of the leaves, but particularly the under side; and be sure to dislodge the enemy so firmly seated on the sides of the midribs. Use the solution as hot as the hand will bear it. After the plants become dry, syringe them with water at a temperature of 140°, laying the plants on their sides, and turning them, so as to thoroughly wash every part. If the pest still infest the plants, repeat the application at intervals. The blotched condition of the leaves may be due to the plants being kept in too low a temperature, and to an excess of moisture on the leaves, or allowing water to stand or drip upon them in too low a temperature. We suspect that they are not constantly supplied with water at the roots.

PROPAGATING DEUTZIA GRACILIS (*Quis*).—Cuttings of the half-ripened shoots, which may be had now from forced plants, each with two or three joints, inserted round the sides of a pot or pan, in a compost of equal parts of loam, leaf mould and sand, will soon root, if placed in a mild hotbed and shaded from sun. Cuttings of similar shoots, taken from plants in the open air, may be inserted in July under a bell-glass in a shady border. Pot them when well rooted, and plunge, in an open situation, in coal ashes. They will not bloom to any extent in the following season, however well managed. To obtain blooming plants for another year, good-sized branches should be layered into pots of convenient size, plunged near an old plant, fastening down the shoots with pegs, and covering with an inch of soil. An incision is not necessary, though it will facilitate the process. It should be made below a joint, in an upward direction, and about half through the branch. In autumn the layers may be detached, potted into 4½ or 6-inch pots, according to the size of the plants, and be wintered in a cold frame or sheltered situation, the pots being plunged in ashes. Such will bloom a little in the following spring, if the plants are strong and the shoots well ripened in autumn.

STRIKING CHRYSANTHEMUM CUTTINGS IN MAY (*Idem*).—Cuttings struck in 3-inch pots in May will make small plants, which may be transferred to their blooming-pots in July, stopping them at the fifth joint or leaf, and again, if necessary, in the middle of July. If the plants are strong and a late bloom is desired, pot them in 9-inch pots early in August, and stop the plants at the same time. To have a good bloom the plants should be struck earlier.

DAPHNE INDICA CULTURE (*B. B.*).—It requires the temperature of a greenhouse, a light airy situation, and a compost of turfy peat two-thirds, and loam one-third, with a free admixture of sand. Free drainage, a plentiful supply of water, and a moist soil when growing, but at other times never very wet nor very dry, are what we have found necessary for its cultivation. To induce stiff growth and keep the plants bushy we stop the shoots, or cut them in in spring after blooming, and keep near the glass, and near to the point where air is admitted. Kept at a distance from the glass, in the shade, and in a close part of the house, it grows fast and weakly, and produces few if any flowers.

GIMURST COMPOUND (*C. W. W.*).—We do not see how we can improve upon your mode of using Gimurst compound—2 ozs. to the gallon. It is just another instance that what will kill a plant in one case will not kill it in another. Try tobacco smoke or quassia water; 4 ozs. to the gallon is strong enough, and use it with a brush over the insects. Were we to syringe plants with it we would use four or five gallons of water.

PEAR LEAVES DISEASED (*A. B., near Chard*).—Your Pear leaves are encrusted with fungi, generally the result of extra feeding and deficient drainage. Perhaps there has been scarcely enough of air in the orchard-house. We attribute the twisted Rose flowers you mention to extra feeding and deficient ventilation in the late sunny weather. A little shade would have been useful.

SOFTING VEITCH'S PERFECTION PEARS (*J. B., Yorkshire*).—This Pea usually takes sixteen weeks from the time of sowing to that of furnishing pods well filled with peas. If sown now it would come in about the end of August or beginning of September, varying a fortnight according to the weather. Yorkshire Hero is an excellent Pea, but not equal to Veitch's Perfection for an exhibition table.

SALVIA SPLENDENS FOR BLOOMING IN AUGUST (*Idem*).—Pot the plant now from an eight-inch to a twelve-inch pot, using turfy loam, with a little leaf mould, and stop the shoots if thin. Tie-out the shoots regularly as they grow, and water and syringe well to keep down red spider. Give plenty of light, keeping near the glass, and abundance of air. It may bloom in August, but there is no certainty of its doing so, its blooming times being autumn and spring, though it may be had in bloom in August by forwarding in a house. Stop the Geraniums now if thin of shoots, and they will not need stopping again to bloom well in August.

IMPROVING TURF OF BOWLING GREEN (*M., Cloughton*).—As the soil is heavy and the grass poor, we recommend it to be sown with Suckling (*Trifolium minus* or *filiforme*), coal ashes to the depth of a quarter of an inch to be sifted over it, and then rolled. A watering with lime water occasionally will drive away worms and improve the turf.

LILIAM GIGANTEUM CULTURE (*A Poor Irishman*).—We should be afraid to put such a fine bulb of *L. giganteum* out in an exposed situation; the winds would be sure to spoil it if you have not a nice sheltered nook for it. You had better shift it at once into a larger pot or tub. Such a bulb as yours should throw up a spike 10 feet high; you may stand it out of doors at once. If you keep it in a pot or tub let it remain in the open air in some sheltered corner till it begins to show flower, when it should be taken into the greenhouse. If you have a sheltered place and wish to plant it out, dig a hole 3 feet deep and 2 feet wide, fill the bottom of the hole with 9 inches or a foot of broken bricks for drainage, on these place a little moss to prevent the soil from getting down amongst the drainage, then place 2 or 3 inches of your prepared soil on the top of the moss. After you have turned your plant out of the pot place it on the hole, and fill the space left around the sides with the soil suitable for Lilliums. This, however, should not be sifted fine, but be used just as it is chopped, in nice pieces of sod about 2 or 3 inches square.

CHANNEL ISLANDS (*A. B. C.*).—At Guernsey you could do what you propose; but whether you could pay your man's wages out of the surplus produce of your gardens depends upon circumstances, such as skill, soil, and season. There is but one town on the island, but you had better reside near that for the sake of facilities of shipping produce to England, and other conveniences. You must go and look for yourself.

TREATMENT OF AZALEAS AFTER BLOOMING (*Agnes*).—As soon as your Azaleas have done blooming place them in a close frame or stove for six weeks, supply them well with water, and syringe them two or three times daily with water. As soon as they have made their new growth put them into a cool frame or pit for a few days. After they have become a little hardened place them in the open air where the direct rays of the sun cannot strike on them. They may remain in this position till the end of September, when they should be taken into a cold pit or greenhouse, but they must not at any time suffer for want of water. The Camellia may be treated in a similar manner, only it will not take quite so long as the Azalea to mature its growth. As soon as you see the young flower-buds formed the plants should be taken at once to a cooler place. If this is not done they will commence their growth again, which will prevent their flowering the following season.

MANAGEMENT OF DOWNTON NECTARINE (*G. K., Serenoaks*).—If your Downton Nectarine was a small tree, such as you would get from a nurseryman, you ought not to have expected any fruit to have remained on it; if any had set it should not have been allowed to remain on the tree the first year after planting. The wood was not ripe, which was the main cause of the young fruit falling off. It is not by any means unusual for the Nectarine tree to set its fruit in clusters in the way you describe, but it would be against all reason to allow them to remain so. They should be cut out with a sharp pair of scissors, leaving but one; this should be left in the best position, where it would not be rubbed by the branches of the tree, and where it would have room to swell to its full size. The best shapen fruit in the cluster should also be left, and not more than from ten to eighteen fruit should be allowed to remain on the tree this year. This should be determined by the strength of the tree.

PIEROMA ELEGANS LEAVES SCORCHED (*M. C.*).—The hotbed was too close for the *Pieroma elegans*. We should think the rank steam generated in the hotbed spoiled the leaves in the first instance; if the hotbed was kept rather close, and the sun came out strong, it would be sure to have this effect on the leaves. The *Pieroma* should receive similar treatment to the Azalea after blooming, for which see answers to correspondents in this and previous Numbers of THE JOURNAL OF HORTICULTURE.

ZINC LABELS (*J. Wilson*).—You had better buy a piece of zinc, score it in strips of the size you need by means of an old knife, and write upon them with the ink for which we recently gave the recipe. We will endeavour to publish some notes on the subject next week.

REMOVING OFFSETS OF AURICULAS (*H. B.*).—Rubbing off the offsets will strengthen the plant, but we rather question whether plants which are inclined to throw off offsets will make large trusses. (*G. H.*)—We do not know of any named collection of hardy self Auriculas. The florists' varieties are too tender.

FOWL MANURE (*Clematis*).—We have not had much experience with this manure used alone, except seeing it applied to grass land in places adjacent to poultry-houses, and there it is sometimes administered too thickly, and with only an indifferent result. We should not advise it being applied to Strawberries or Raspberries, but for other fruit trees it may be beneficial, and to such plants as Geraniums, which require a stimulating rather than a lasting manure, it may do good; but we think it will be better in all cases to mix it with five or six times its bulk of soil, and apply it as a top-dressing just before rain.

CREEPERS FOR THE SUNNY SIDE OF A HOUSE (*Idem*).—If you want a fast grower, plant *Jasminum revolutum*, which has also the property of looking well all the year, as likewise does the Evergreen Honey-suckle, or, better still, the Yellow and White Banksian Roses. Clematises having a shabby look for so long a period, can only be advantageously planted in company with something else. A *Wistaria chinensis* is better, and a *Bignonia capreolata* also quickly occupies a large space. If, however, the space is limited, and the situation good, try *Ceanothus aureus* and *dentatus*, or *Magnolia grandiflora*; or for an exposed one, *Pyraeanthus* look very well.

WATER PLANT FOR SMALL POND MADE FOR BEES (*H. W.*).—*Ranunculus aquatilis* looks as well as anything that merely floats on the water, or if your case be urgent and the water stagnant, get a pallid of *Aponogeron distachyon* (duck's meat), from a neighbouring pond and place in it. *Veronica beccabunga* (Brooklime), also grows freely in ponds not too deep, and the same may be said of Water Cresses and many other plants. We expect the place is too small for a Water Lily, but in the absence of any of these we would let something like a basket-lid or two float in the water. It would enable the bees to find a landing place to dry themselves and regain wing.

ENDIVE (*H. M. J., Ireland*).—It is a general remark that no one garden in the United Kingdom produces such good vegetables, as a whole, as are sold in Covent Garden. The reason is obvious: years, or rather ages, of practice have found out which locality is best suited for each individual plant, and it is cultivated there. The best Endive we have met with in a growing state was on the banks of the Thames, where manure by the wagonload was applied almost to excess. The Endive was grown on in the autumn as long as it was thought safe to allow it to remain outside, and for early winter use some of it was blanched then; the rest taken up with balls, and placed under glass, where it was protected, and brought into market as required. The only points in its culture differing from that pursued by every one else, is the extra richness of the soil, and the knowledge which the cultivator of, perhaps, only some three or four different articles enables the grower to attain of the details of good cultivation in each, which no private individual, having a number of objects to attend to, can expect to arrive at; besides which, it must be observed that everything sent to the London market is sent when at its best; whereas in private families the article is only sent when wanted, which may sometimes be after it has passed its best, or may not have arrived at it.

FIG TREE NOT BEARING (*John Wilson*).—It is likely that your tree wanted more water during the summer and early autumn months of the last and the preceding year, as the Fig seems to require more moisture than any fruit we know of. If you can supply it with liquid manure at times during the summer, it is likely you will have more success hereafter. Perhaps this can be done without disturbing the pavement over the roots. Do not give the liquid manure strong, and at times give plain water instead.

VINEYER'S—SALARY (*Inquirer*).—It is quite impossible to say how many vineyards a gardener could manage, and we know of no instance of a gardener having no other employment. From £75 to £100 a-year would not be too high a salary.

REMOVING FLOWER-STEMS FROM TULIPS (*A Subscriber*).—We do not expect any particular good to arise from cutting off the flower-stalk unless it shows symptoms of seeding, when it had better be taken off. Do not take up the bulb until all foliage and flower-stems have quite ripened and died down, as Nature in this, as in most other cases, does her own work best.

REARING AMARYLLIS FROM SEED (*G. H.*).—The process is very tedious, and takes at least three years to produce a bulb large enough to flower. It may, however, be accomplished by sowing the seed as soon as it can be had, and allowing it to remain on the surface of the soil for some time

before giving water, when heat and moisture may be applied at the same time, and all during the time the plants seem growing; but when they seem to stop withhold water by degrees, and let the small bulb ripen and rest, and remain completely cool and dry for two or three months, when the process of growing on may be repeated. It is possible you may obtain seed from the trade, but it is not at all plentiful.

NAMES OF PLANTS (*E. S.*).—Your flowering tree is the Bird Cherry (*Prunus padus*). (*H. R. F.*).—*Carpinus betulus*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending May 13th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun. 7	29.980	29.889	69	32	56	53½	S. E.	.37	Dry haze; rain; showery; cold at night.
Mon. 8	29.944	29.755	70	46	55	53	N. E.	.12	Slight fog; dry haze; fine; overcast; rain.
Tues. 9	29.592	29.542	72	40	55½	53	S. W.	.73	Foggy; low white clouds; very fine; thunder, lightning, and
Wed. 10	29.488	29.485	52	42	56	53½	N. E.	.60	Rain; showery; constant heavy rain. (heavy rain at night.
Thurs. 11	29.703	29.486	57	41	55	52½	N. W.	.12	Cloudy and showery throughout; cloudy at night.
Fri. 12	29.943	29.799	63	28	55	52½	S. W.	.00	Cloudy; low dusky and white clouds; very fine at night.
Sat. 13	29.979	29.943	66	38	54	53	S.	.09	Very fine; cloudy and fine; overcast; rain.
Mean	29.805	29.699	62.55	38.14	55.21	53.00	.....	2.03	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

TAKEN TO COCHINS.

"TAKEN TO Cochins!" Well, and how came that about? A devotee to Bantams, the smallest of fowls, to become a keeper of the largest!—a lifelong worshipper, to speak figuratively, of Game, the perfect in symmetry, to fall in love with Cochins, who have no symmetry at all! But 'tis human nature to go from one extreme to another. Rome republican became Rome imperial, and the democratic boy becomes the toy man. A friend six feet two in his shoes was the other day walking round my rectorial domain, and, catching sight of Will Waddle (that is the name of my Cochin cock), exclaimed, "Well, what a monster!" "Yes, but he is so gentle." "Ah! we giants are a gentle race," responded Six-feet-two. "True, so you are."

"Taken to Cochins! And how came that about?" I again exclaim, for it seems odd to myself, as I carry with difficulty in both hands my present feathered pets, for my late ones I only wanted one hand. Well, it came about in this way: I have often wished to keep large fowls since I have resided here; but how was I to manage it with no back yard, and no divisions save of privet and laurel between stable-yard, and kitchen garden, and flower garden? I have frequently puzzled my head, but all in vain. "How can it be done?" I had meditated upon this text, but the fruit of my meditations had been nought. At last a sudden thought struck me—a bright first thought, quite an inspiration; it was Sir Isaac Newton and the apple over again. Why, was there not my pigstye in a corner hidden by my stable? There close by was the manure-heap of course, all screened from view by a well-grown privet hedge, giving an interior some 6 yards square. "I have it," I exclaimed. "I'll take to Cochins; it will be large enough for them inside the hedge." A brief consultation followed with my old man, great at pigs and potatoes, and of whom it is said by the malicious that he is his master's master. I explained to George that as Cochins did not fly, a little wire netting put round the bottom of the hedge would be sufficient; then a low gate. Then the little building used sometimes as an extra pigstye would do for a fowl-house, as they do not perch high, and all would be complete. He approved, entering into my plan warmly. I was charmed with this, for he usually thwarts me, throwing buckets of cold water upon my plans. I guessed the reason of his hearty acquiescence. He felt the Cochin fancy would be good ground on which we should meet to compromise matters, for he lived in daily fear that, in spite of all, I should some day have full-sized fowls running about wherever they liked, and that would break his gardening heart altogether. My Game chickens last summer frightened him; when they grew a little larger he said, "Sir, I have been a thinking them Game vowl make a caddle in the garden, that you'd better break off their legs short"—i. e., send them to table. took the hint, and

sold them immediately. Well, after my new plan had been talked over, off went our coats, and we worked together in the best of humours. We cut the hedge down to 4 feet high, put in several little posts outside, stretched the wire netting from post to post, hung our gate, put up a thick low perch in the desired pigstye, and there was the walk and house quite ready. There was the manure heap, there the cinder ditto, there a clear sunny space; and we looked on, feeling that "in all labour there is profit," and pleasure too. Then said George, "There, now, the vovls 'ull be with the manure, and all the dirty things be together." He could not help being slightly severe. Everything being prepared, a pen of Cochins soon arrived. George grew enthusiastic, having now no fears about his garden; and after a pause (he makes long pauses now and then, and I know something will follow them)—"Now, I ha' been a thinkin that the farmer 'ull let me make a hole through they boards into his vield; a little pick o' grass 'ull do um a sight o' good." I asked my good neighbour, best of yeomen and churchwardens, and the request was at once granted. All this happened two months ago; and since that time I have been daily watching the habits of Cochins in a corner formerly avoided, but now full of interest—formerly dull, but now rendered lively, and a source of keen gratification, owing to the presence of fowls.

J. G. Wood somewhere says, "If you want to understand the ways of birds, go and stand or sit out of doors near some trees, remain motionless, and soon the birds will come out all round, just as if you were not there." I have frequently followed his plan with some success. The same plan may be followed, and with far greater success, in regard to fowls. I go and sun myself in my Cochins' yard when my head has grown dizzy with desk work, or I fail in breaking in a refractory sermon—they will be obstinate sometimes, even with tolerably fluent composers—and watch my Cochins. But to return. First, in praise of Cochins, I would notice what has indeed often been remarked upon, but cannot easily be magnified—viz., their great docility. Never once have they attempted to get over my four-feet-high fence, nor even mounted the still lower wall of the pigstye, although it is broad at the top and tempting. On the nest I feed the hen from my fingers. I raise her, she does not resist. I extract an egg or a chicken, she trusts me. Should they walk out of the opened gate, they are most easily driven in—hold up a handkerchief, it is enough. I saw a great number so driven in, and most soberly they returned to their quarters, two and two like a ladies' school,—not an ordinary ladies' school, for there was not a giddy one or a single hoyden among them, but rather a quaker ladies' school of all sober-minded girls. At the same time and place some Bantams had escaped, and how they flew, and resisted, and struggled for the mastery! saying, in spirited Bantam language, "Go in again! No, not if we can possibly help it, that we won't!" Cochins are more like sheep than fowls. You can drive them, and they huddle in a corner and quietly gaze at you. Then, too, with their wonderfully soft fur-like feathers—they are certainly more

like animals than birds. They seem philosophically to say, "We will take life easily whatever happens." When my dog for the first time entered with me, there was not the cackle and strut of other fowls, rather "We should like to be alarmed, but it is not worth while thus to disturb ourselves." A Cochin cock seems to possess (supposing I believed in the transmigration of souls), the spirit of some easy, fat, good-natured fellow. I am sure if Cochins were the only inhabitants of Canada, or people Cochin-like, they would quietly give it up at once to the Yankees. Will Waddle is a good easy soul; if a man he would enjoy nothing so much as sitting in the sun and smoking a long pipe (short pipes imply fidgettiness). He acts upon the motto, "I will not plague myself about trifles, nor meet trouble half way." Wise bird! May I ever be like him.

A word in regard to the appearance of Cochins generally. Most persons on first seeing them exclaim, "How ugly!" But we should remember there are two kinds of taste—the taste natural, and the taste acquired. A child seeing Hamburgs would at once admire them—this is the taste natural—just as all children like water, but have to acquire the taste for beer. But the taste for Cochins has to be acquired. Granted, but this rather adds to the pleasure when acquired, and it is worth acquiring I assure you, good readers. The hen Cochin I hold to be handsomer than the cock. This is singular, as throughout creation (save, ladies, in the case of yourselves), the male is the better-looking of the two—e. g., among beasts, the lion; among birds, the Pheasant; and in poultry, the Cochin cock is the only exception. I like the head of the hen, so sagacious-looking and gentle, not a bit bold. I like to watch her just stepping out, her intelligent-looking head in a listening attitude. The colour of my Cochins is light buff. I should like to have the subject of colour in these birds debated, as the earlier-imported ones are said to have been dark, and I am a stickler for original colour in fowls and Pigeons, as being the purest; though no wonder that a colour so novel and unique in fowls as buff in its many shades should have been so much sought after. The cock Cochin looks best, I fancy, when he is eating; you see then his width of back, and the beautiful tints of his plumage. I find, though my birds have a grass run, that, save in damp and mild weather, they make but little use of it; so unlike energetic Game fowls, who would daily be round and round the four acres. As to laying, we all know their marvellous powers. I have had forty eggs in forty days. "See, another egg, George!" "Yes, sir, they be the best vowels you ever had, and mind you keep 'um." Can we not improve their shape for the table and also their flavour? One friend tells me he always has his Cochins juggled like hare, and that so cooked they are excellent. The flavour of the eggs I think very superior, and the grass (they came from a town), has improved their colour inside and out. The mistress likes them, the cook gets hold of them when she can; but as yet they appear chiefly on the breakfast-table. Improve the shape and taste, what fowl could eclipse them? Surely these are the birds for those to keep who mourn over the number of eggs sent from abroad, and who have little room. Thus I have in all good faith detailed the reason I have taken to Cochins, and my experience with them.—WILTSHIRE RECTOR.

YEW TREES POISONOUS TO DUCKS.

We were made a present of some fine Aylesbury Ducks last year, and one by one they all got swelled crops and died. The person who had the care of them had the last one opened, and found a hard ball of yew leaves collected in the gizzard, which prevented all food passing, and was evidently the cause of its death. There were yew trees hanging over the wall of the yard, just over the water where the Ducks drank, and the leaves falling into the water were swallowed by them, and caused the misfortune. It shows there cannot be too much caution used about these dangerous trees, as their leaves falling into water may affect animals as well as birds.—(H. C., *Kingsfort*, in *Irish Farmer's Gazette*.)

EXHIBITION PENS FOR TURKEYS.—Allow me to announce, for the comfort of any Turkeys who may have suffered from past imprisonments at the Bath and West of England Shows,

that spacious apartments are provided for their accommodation at Hereford. This further extension of liberality on the part of the Society was only agreed to at their last meeting, and though late in the day it is—NEVER TOO LATE TO MEND.

A CRY FOR SYMPATHY.

A few weeks since "Y. B. A. Z.," or the "Persian" gentleman, expressed his opinion that exhibitors ought to have a little more courtesy shown them. As this fact was indelibly impressed on my own mind, I fully expected that some of your numerous correspondents would echo his sentiments and go more fully into the matter, but have looked in vain for any further remarks on the subject. Since adopting poultry as a hobby my experiences have been painful in the extreme. First, I was foolish enough to suppose that as an exhibitor of a pen of poultry I was entitled to free admission, the same as if I exhibited a fat cow, but I found I must pay my half-crown like the ordinary public. As I find the poultry generally the most attractive part of a show, and very few exhibitors send less than three or four pens, I cannot see the justice of this. On one occasion I had a pen of fowls mis-sent, and did not receive them until nearly a week after the show was over, and had to pay something considerable for carriage. On sending the bill to the Secretary of the show, stating that as the mistake was owing to no fault of mine, I thought the Committee should pay the extra carriage, I did not get even the courtesy of a reply. This recalls to my mind going some sixty miles to London expressly to see a poultry show at the Agricultural Hall, Islington, held in the minor hall at the same time as the dog show. I found that to see the poultry I must pay 5s. to go through the dog show, as there was no other way to see the poultry. Truly, thought I, no wonder they manage better for poultry in France.—BLACK SPANISH.

PIGEONS AND ROOKS.

I must really beg to differ from our friend "WILTSHIRE RECTOR" as to his opinion respecting the above, expressed in his letter in No. 214. I have on many occasions known Pigeons forsake their abode when they have been placed near a rookery, although their house has been situated in a most comfortable and sheltered spot where neither cat nor rat could possibly have access to disturb them, and it has been attributed solely, and I believe on good grounds, to the proximity of the rookery. I do not for a moment mean to throw a doubt on "WILTSHIRE RECTOR's" word as to his having kept Pigeons at his own house near a rookery, as there are always exceptions to every rule, but I think that in most cases it will be found that Pigeons have a decided dislike to rooks.

Our friend "WILTSHIRE RECTOR" again remarks that Pigeons will not stay in houses that are placed on the top of a pole. Now, in the southern part of England at various places, and particularly at farms, we often see Pigeons with such a house, and that they breed and live well there. A friend of mine keeps about twenty-five in a similar house, and they do extremely well and are very healthy. I think "WILTSHIRE RECTOR" must allow that if these houses are built well, with roomy compartments, his fears of cats, rats, and draughts may be altogether dispelled; in fact, I am rather partial to these houses, and I think that if any reader is desirous of having one, and have it made, as I suggest, with roomy compartments, he will find that Pigeons stop and thrive very well in them.—HAMBURG.

WILD FOREST FOWLS OF ENGLAND

ARE very little known to the public, but they have been kept for a century in a very remote part of the county of Somerset, adjoining that extensive tract of land known as Emoor Forest, sheltered by an old ruin, and I may say almost unacquainted with man, except the shepherd.

These little fowls weigh 5 lbs. or thereabouts; carriage rather low, somewhat resembling the Partridge; body very round and plump; rose comb, round wattles, and red earlobes; colour pale blue with a shade of ochre; male and

hens both one colour. A few sport from the ordinary colour to black. Their feathers have been tested by the best fishermen and found to be the best for artificial flies, for which purpose these fowls have been kept.

The hens lay about fifty eggs each before they give signs of incubating. I have found them the best of mothers, well adapted to rear Pheasants, being in their habits somewhat similar. I first procured them in the market, where they caught my attention by being all of them of one colour, pale blue shaded with ochre colour. By making inquiries I discovered what I have mentioned in the former part of my letter.—H. LEWORTHY, *Barnstable*.

HENS' NESTS.

It is a common complaint which your correspondent "PERCY CROSS" makes that hens choose other nests than those generally made for them, and with all respect for Mr. Geyelin's ingenuity his proposed plan of using pans will not remedy the evil. Any close receptacle for the nest harbours vermin, which breed to a certain degree in all poultry-houses, and if that is the case the contents of the nests have been a source of irritation to the fowls, and they have sought another nest for themselves. To remedy this annoyance, which too frequently occurs, we produced the "Sanitary nest," which is advertised by us in your columns, and which has given general satisfaction, the orders we have received for them having been repeated in almost every instance. These nests are more particularly intended for laying hens; the nests for sitting hens are at all times best made on the ground, the earth being hollowed out a little to receive the short straw.—E. AND F. CROOK, 5, *Carnaby Street, London*.

THE DOMESTIC TURKEY, WITH ITS BREEDING AND MANAGEMENT.

The following very practical article is from Wilkes' "Spirit of the Times" (American):—

The domestic Turkey can scarcely be said to be divided, like the common fowl, into distinct breeds; although there is, indeed, considerable variation in colour, and also in size. The finest and strongest Turkeys are said to be those of a bronzed black, resembling as closely as possible the original stock; they are reared the most easily, are large, and fatten rapidly. Some Turkeys are of a coppery tint, others of a delicate fawn colour, others parti-coloured, grey and white, and some few of a pure snowy white. All these are considered superior to the black; their colour indicates something like degeneracy of constitution, and they are seldom very large-sized.

To describe the domestic Turkey is superfluous;—the voice of the male, the changing colours of the skin of the head and neck; his proud strut, with expanded tail and lowered wings jarring on the ground; his irascibility, which is readily excited by red or scarlet colours—are points with which all are conversant. Turkey cocks are pugnacious and vindictive, and often ill-treat the hens; they have been known to attack children; and combats between them and the Game cock have taken place, in which the latter was more oppressed by the weight of his antagonist than by gladiatorial skill; in fact the bulky hero has been worsted, as he cannot use his spurs with the address exhibited by the Game cock, which, moreover, fights with method.

The adult Turkey is extremely hardy, and bears the cold of our winter with impunity; during the severest weather, flocks will roost at night upon the branches of tall trees, preferring such accommodation to an in-door dormitory.

The impatience of restraint and restlessness of the Turkey render it unfit company for fowls in their resting-place; in fact the fowl-house is altogether an improper place for these large birds, which require open sheds and high perches, and, altogether as much freedom as is consistent with their safety. Although Turkeys will roost, even during the winter months, on trees, this should by no means be allowed; the feet of the birds are apt to become frozen from such exposure to the air. It must be remembered that the domestic Turkey, hardy as it is when adult, is not equal in point of endurance

to its wild relative, bred in the woods and insured to the elements.

Turkeys are fond of wandering about hedgerows and the borders of fields; they love to visit turnip fields, where, besides the leaves of turnips, which they relish, they find insects, slugs, &c., which they greedily devour.

In the morning they should have a good supply of grain, and after their return from their peregrinations, another feed; by this plan not only will the due return home of the flock be insured, but the birds will be kept in good condition, and ready at any time to be put on fattening diet.

In the choice of birds for stock, care is requisite. The cock should be vigorous, broad in the breast, clean in the legs, with ample wings and a well-developed tail plumage; his eyes should be bright, and the carunculated skin of the neck full and rapid in its changes of colour.

The hen should be like the cock in plumage; those with white feathers appearing amidst the black should be rejected; her figure should be plump, and her actions lively and animated. The hen breeds when a year old, or rather in the spring succeeding that in which she herself left the egg; but she is not in her prime until the age of two or three years, and will continue for two or three years more in full constitutional vigour.

About the middle of March, generally speaking, the female commences laying: she indicates the coming event by a peculiar cry, by strutting about with an air of self-satisfaction, and often by prying into out-of-the-way places, evidently in quest of a secret spot for incubation; for the instinctive dread of the male is not removed by domestication, nor has the male lost that antipathy to the eggs which is his characteristic in a state of nature. She should now be closely watched, and some management is required to induce her to lay in the nest assigned to her. The nest should be prepared of straw and dried leaves; it should be secluded; and to excite her to adopt it, an egg, or piece of chalk cut into the form of an egg, should be placed in it. When her uneasiness to lay is evident, and symptoms prove that she is ready, she should be confined in the shed, barn or place, in which her nest (which should be a wicker basket) is prepared, and let out as soon as the egg is laid. The Turkey hen is a steady sitter; nothing will induce her to leave her nest; indeed, she often requires to be removed to her food, so overpowering is her instinctive affection. The hen should on no account be rashly disturbed, no one except the person to whom she is accustomed, and from whom she receives her food, should be allowed to go near her, and the eggs should not be meddled with.

On about the twenty-sixth day, the chicks leave the eggs, and these, like young fowls, do not require food for several hours. It is useless to cram them, as some do, fearing lest they should starve. When the chicks feel an inclination for food, nature directs them how to pick it up. There is no occasion for alarm if for many hours they content themselves with the warmth of their parent and enjoy her care only; yet some food should be provided for them, and this should be of course suited to their nature and appetite; here, too, let the simplicity of nature be a guide.

The first diet offered to Turkey chicks should consist of eggs boiled hard and finely minced, or curd with bread-crumbs and the green part of onions, parsley, &c., chopped very small and mixed together so as to form a loose, crumbly paste; oatmeal with a little water may also be given. They will require water; but this should be put into a very shallow vessel, so as to insure against the danger of the chicks getting wet. Both the Turkey hen and her chickens should be housed for a few days; they may then, if the weather be fine, be allowed a few hours' liberty during the day, but should a shower threaten, they must be put immediately under shelter. This system must be persevered in for three or four weeks. By this time they will have acquired considerable strength, and will know how to take care of themselves. As they get older, meal and grain may be given more freely. They now begin to search for insects and to dust their growing plumage in the sand. At the age of about two months, or perhaps a little more, the males and females begin to develop their distinctive characteristics.

In the young males, the carunculated skin of the neck and throat, and the horn-like contractile comb on the forehead assume a marked character. This is a critical period.

The system requires a good supply of nutriment, and good housing at night is essential. Some recommend that a few grains of Cayenne pepper, or a little bruised hempseed be mixed with their food. The distinctive sexual marks once fairly established, the young birds lose their names of "chicks," or "chickens," and are termed "Turkey poults." The time of danger is over, and they become independent, and every day stronger and more hardy. They now fare as the rest of the flock, on good and sufficient food.

With respect to the diseases of the Turkey, with them as with all other poultry, prevention is better than cure. The most important rules are, Let the chicks never get wet, and encourage them to eat heartily by giving a good variety of food, yet to beware of injuring the appetite by too much pampering. Taking a pride in them is the great secret of success in the rearing of domestic poultry.—S. M. S.

[We heartily endorse the foregoing. Different climates make different treatments necessary. The hen in our changeable atmosphere should be under her rip for five or six weeks, and for some time after that she should not be let out, if there be heavy dew or white frost. She will start with thirteen poults, through the wet grass, and leave them behind one by one till only three or four remain; she is perfectly satisfied with this remnant of her family, and heeds not the distant and faint cry of those that are perishing in the damp grass. An empty china crate, covered at the top with straw is a good rip for a Turkey hen; it allows her room to move about, and the young ones can be fed in it without their food being taken by the other poultry. A thatched hurdle is a better cover than anything permanent to put over the crate.]

PLACING AN ARTIFICIAL SWARM IN A STEWARTON HIVE.

I HAVE just received a Stewarton-hive and I should like to put an artificial swarm into it. I must, I suppose, drive the swarm into a common hive, and having put two boxes of the Stewarton together, all the slides having been removed, dash the bees on the top. There is a bar of wood in each of the boxes to help to support the comb—is it advisable to retain these? I should think the bar in the honey box would be found very inconvenient when cutting out the comb. Is there any objection to dahlias being grown near an apiary? I have heard that there is.—M. S.

[It will be better to leave the driven bees in the common hive until evening, say an hour after sunset, when a cloth may be spread on the ground, on which should be laid two sticks about a foot apart; then with a smart stroke dash out the bees and instantly place the Stewarton-hive over them, resting on the sticks. The bees will speedily ascend into it, and when they have done so, the hive may be put in the place of the old stock. If more convenient the removal may be deferred till early the next morning, but should be effected before sunrise, and precautions must be taken against any rain which may fall in the meantime. We should remove the transverse bars, which are only useful in supporting the combs when travelling. We believe there is no objection whatever to growing dahlias near an apiary.]

SWARMING VERSUS STORIFYING— ENLARGEMENT OF SUPERS.

A FEW observations have appeared lately relative to the subject which forms the heading to these remarks. Our friend "J. E. B.," with whom I have had the great pleasure of becoming personally acquainted within the last few days, at page 444 has expressed his belief that a larger harvest of honey will be obtained from hives that are permitted to swarm than from those which are worked on the non-swarming principle. I cannot agree with him in the conclusion at which he has arrived from what may be reckoned as experience gained from two exceptionally prolific honey years. In the majority of seasons he would obtain little or no honey by following his plan. If "J. E. B." had worked the same three hives without allowing them to swarm, or had succeeded in preventing their doing so, I think his supply of honey would have been nearly, if not quite, doubled, if

having swarmed, they afforded him so good a harvest as an average of 35 lbs. each. But this quantity cannot be considered as all gain, for he says that he had to feed liberally. It is frequently the case when large supers are taken from hives that have also thrown off swarms that little honey will be found stored in the stock hive. I have more than once in my early bee-keeping days had to regret the loss of a fine stock from this cause, it having succumbed to starvation before I had realised the fact that a super of honey, and plenty within the stock, did not always go together.

I quite agree with much that is said on this subject by "A RENFREWSHIRE BEE-KEEPER." I always look upon the issue of a swarm from any of my depriving-hives as a great misfortune, and as a bar to the completion of any super which may have been commenced. I do not, however, often return the swarms, never, I may say, except with frame hives, where the combs may be readily examined and the royal cells removed. Without such facilities, to return swarms to storified stocks may involve a great deal of trouble, ending occasionally in the loss of the hive or swarm altogether.

"J. E. B." quotes Dzierzon as an authority in support of his opinion that a larger supply of honey will be afforded by a hive permitted to swarm than from a non-divided stock. Where there is a little limit to the number of hives that can be kept by one person I have no doubt that a larger profit can be obtained by allowing the bees to swarm extensively; but any bee-master who has reached the limit to which he can retain his apiary will do well to work at least half of his hives on the non-swarming principle. I have no hesitation in asserting that if any one can keep only a limited number, say of ten hives, he would be able to obtain much larger supplies of honey by preventing swarming from the majority of them. One or two swarms might be permitted for the purpose of keeping up the stock. These, and what would be likely to come without permission, would be sufficient for supplying deficiencies and securing the desired number of strong and well-furnished colonies.

In respect to affording additional room to supers I cannot quite agree with our friend "A RENFREWSHIRE BEE-KEEPER." The whole system of my management of late years has consisted of the very plan he reprobates as bad practice. So soon as the first super is nearly filled with combs a shallow eke is slipped in between the super and the stock, followed by another, if needed. It is in this way that all my large supers have been obtained. Very rarely have I succeeded in getting a super filled which was placed above one already nearly completed. I can only recall one such case. Perhaps I have not tried very often, as I considered the prospects of success about on a par with expecting a good yield of honey in a box worked as a nadir. I consider slipping in an eke which has neither top nor bottom to be very different from raising the first super on a complete box with small apertures for communication. If this latter plan is followed the apiarian certainly runs a risk of finding the contents of the first super to be more or less removed. I have, however, taken off good boxes of honey under such circumstances, but do not recommend this mode of enlargement.

The bee-master must be guided in his judgment as to whether his super need enlargement or not by the time of the season and the appearance of the honey harvest. It is certainly preferable to have a moderate-sized super well and completely filled to a large one indifferently so. It is frequently advisable when a depriving-hive becomes very crowded with bees to follow "A RENFREWSHIRE BEE-KEEPER's" advice, and raise stock hive and super on a nadir. The super will usually be completely filled, and if the bees work in the nadir, which is doubtful, it can be removed at the close of the summer, and the combs made available the following year. I have more often than not found that a nadir supplied to a crowded hive, with a large super partially filled, is not at all used by the bees for comb-building. The bees cluster thickly from the top, and the great pressure of numbers in the super being removed, work in it will be proceeded with more rapidity. I fully endorse the sentiments of "A RENFREWSHIRE BEE-KEEPER," that all correspondents should be free to express their opinions, and even criticise the plans and proceedings of any of the

brotherhood. I know it will be done by him, at all events, in a good and proper spirit. Although I have somewhat condemned his practice of placing an empty super over one that is being filled, yet he seems to have found it to answer. On the other hand, he objects to the mode of practice which I have followed with so much success—that of raising partially filled supers on ekes placed between them and the stock. This is a fair subject for future experiment, and I hope to be able to try his plan as well as my own. An "AMATEUR," who details his experience at page 277, seems to have been very successful, and to have weighty reasons for upholding his friend's system. It is possible that there is, after all, no very great difference in the results likely to be obtained from following either of the two modes of management.—S. BEVAN FOX, *Exeter*.

DEATH OF A QUEEN.

On the 4th of April I put some pieces of honeycomb before my hives for the bees to clean. In the afternoon I discovered feeding upon the comb a queen bee, but in a very weak condition, with one wing torn. I brought her into the house and succeeded in reviving her. Having six stocks I was quite at a loss as to which of them the queen belonged to, but as evening was approaching I went out in perplexity to inspect the hives. My doubts were speedily at an end, for there was extreme noise and excitement in a strong stock in a bar-frame hive. I brought out the queen immediately and put her at the entrance of the hive, into which she crawled slowly, being still weak. In half an hour the hive was perfectly quiet. I made sure the stock would now be all right as it was very strong in bees, but the queen was about four years old. On the 26th of April Mr. Carr, of Newton Heath, being on a visit to us, inspected all my stocks, and found in this one drone brood in all stages of development in worker cells, but no queen, and it appeared very evident that these eggs were laid by worker bees. This being the case Mr. Carr joined to the stock some bees and their queen, the remains of a colony the majority of which had died of dysentery in the spring. Two combs containing brood were cut out and put into the hive after the bees had been successfully joined. The next day we found a small dead queen thrown out, which had the appearance of having been defunct some time, leading one to suppose that the bees would not part with the body of their beloved queen till they had received a fertile successor. We examined the hive afterwards and saw the beautiful queen quite at home, running about on the combs, and I expect to have a large super filled with honey from this stock during the summer. Your readers will perceive how necessary it is to have every stock examined in the spring. In this case if it had not been done the bees would gradually have died away, and probably by July there would not have been one left, although the hive in April contained plenty of honey, and was very strong in bees.—J. M. W.

[The old queen was doubtless expelled from the hive; and as you state her age at about four years there is a fair probability of her having become unfitted for her maternal duties, although we have known the same thing happen to queens that were by no means superannuated. The occurrence of fertile workers is so rare that the hypothesis of their existence may generally be altogether set aside. In this case there certainly were none, but a young queen was reared after the expulsion of her predecessor, and which, remaining a virgin owing to the non-existence of drones so early in the season, must, perforce, have become a drone-breeder. She was doubtless imprisoned and killed on the advent of the fertile queen, her body presenting the usual dried and shrivelled appearance consequent upon the treatment she had been subjected to during her incarceration. "All's well that ends well," and in your case there is fortunately nothing to be regretted; but you made a great mistake and ran a very great risk of losing the whole by not removing the drone-breeder, of whose existence the presence of drone brood afforded *prima facie* evidence, and who should have been sought for until found. Very recently our esteemed correspondent "J. E. B.," under exactly similar circumstances, having, in deference to a caution which

the unavailing endeavour to discover a drone-breeder, added to a drone-breeding stock the fertile queen and workers of a weak colony, and had the mortification of finding the new sovereign cast out dead the next morning.]

HONEY FLAVOURED BY ONIONS.

"A MAN OF KENT" may safely conclude that the smell emanating from his hives is produced by the bees resorting to the wild garlic. The reason why I conclude it to be so is this: In accompanying my honey for disposal to Messrs. Fortnum and Mason's in 1859 I was struck by the appearance of a good-looking lot of honeycomb, but its beauty was all that it had to boast of, for it smelt and tasted most villainously of onions. The foreman of the honey department informed me that it was sent to them from Essex, and that it had been produced in the neighbourhood of a field of onions that were grown for seed. It was contemplated to run it off, throw it away, and melt down the combs, as in any other shape it was perfectly unsaleable.—UPWARDS AND ONWARDS.

OUR LETTER BOX.

COLOURED PLATES OF FOWLS—BROWN REDS NOT COMING TRUE (Parlist).—The best drawings of fowls are those in the "Poultry Book." They are by Harrison Weir, and coloured. They are in his best style, and well worth framing. We know the coloured etchings you speak of, and recollect the time when they came up. They are all by H. Atken, a printmaker, who lived at the corner of Vere Street, close to the Church; he was famous for them. He has been gone for many years. The last time we saw any of them was a short time since; they were in a shop window in Holywell Street. An advertisement would get them at once. Brown Reds do not always throw pure, as almost all the strains are mixed with Black Red, which are used for colour.

COCHIN HEN WITH ENLARGED CROP (Eboracum).—Your hen has been suffering from much internal fever, and probably is so still. This induces her to drink continually, and has caused distension and displacement of the crop. It is sometimes incurable. The treatment is to shut up the bird, to purge with castor oil, and to give water sparingly. If it be mixed with vinegar so much the better. The water may be given three or four times per day, but not allowed to remain by her.

DORKING COCK DISAGREEING WITH A CALVE COEUR HEN (Beta).—It is unquestionable that fowls are subject to likes and dislikes, and no doubt in this instance the cock has an antipathy to the hen in question. Such being the case we advise you to withdraw her. A daily beating is antagonistic to condition, and may account for her not laying. Put her with the Cochin cock.

COCK'S COMB FROSTED (W. R. P.).—Rub the comb with strong camphor ointment frequently.

INDIAN CORN AS FOOD FOR POULTRY (Chanticleer).—Indian corn is a good occasional food for adult poultry. It is not good for chickens—in fact, not good enough. We do not consider Pigeons injurious to a garden.

DUCKS (Constant Reader).—They will not injure the Perch nor any other kind of fish in a pond.

DIARRHEA IN PIGEONS—KEEPING THEIR EGGS (W. H. W.).—Feed your Pigeons on small old beans. Give as a corrective three or four pieces of old mortar or chalk, about the size of peas, every day till the looseness is cured. Pigeons' eggs are best set as soon after being laid as convenient. It is reported that they will keep good for hatching about a fortnight, but I have never tried them.—B. P. B.

PIGEON PAIRS (Miss King).—It is one of the popular errors to suppose that the two Pigeons in a nest are always cock and hen—they are quite as often two of one sex. There is nothing singular in Doves having two hens in a nest, but it is certain that the Doves are Ring Doves (*Columba palumbus torquatus*), which is our largest native Dove or Wood Pigeon, of a greyish blue colour, with a white ring round its neck. If they are an account of their breeding in confinement would be interesting. I suspect, however, that the Doves are Collared Turtles (*Columba risoria*), the laughing Dove, or common cage Dove, of a light fawn colour, with a black ring round the neck, as these are sometimes improperly called Ring Doves.—B. P. B.

GERMAN PASTE FOR BIRDS (R. F.).—Take 1 lb. of wheat flour or of pea-meal, 2 ozs. of fresh butter, 4 ozs. of brown sugar, three eggs boiled hard and chopped very small; put the flour or meal, with the butter, chopped eggs, and sugar, into a wide saucepan over a slow fire, and keep stirring it to prevent its burning. When it gets dry continue stirring it until it becomes crumbly. When crumbly put a pint of cracked hempseed into the mixture and mix well together. If burnt it is injurious to the birds. It will be good for months if kept in a dry cool place.

LONDON MARKETS.—MAY 15.

POULTRY.

We have no difference to quote since last week. The supply is very small and the demand bad.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	3	6	4	0	Grouse	0	0	0	0
Smaller do.	3	0	3	6	Partridges	0	0	0	0
Chickens	2	6	3	0	Hares	0	0	0	0
Geese	7	0	7	6	Rabbits	1	4	1	1
Ducklings	5	0	5	6	Wild do.	0	0	0	0
Guinea Fowls	0	0	0	0	Pigeons	0	0	0	10

WEEKLY CALENDAR.

Day of M th Week.	Day of Week.	MAY 23-29, 1863.	Average Temperature near London.			Rain in last 28 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
23	Tu	Mulberry leaves open.	67.7	44.9	56.3	13	0 43	51 47	12 3	10 6		3 31	143
24	W	QUEEN VICTORIA BORN, 1819.	68.3	44.0	56.1	11	56 3	53 7	50 3	24 7	●	3 26	144
25	Th	ASCENSION. PRINCESS HELENA.	66.3	43.7	55.0	15	57 3	56 7	37 4	29 8	1	3 20	145
26	F	White Clover flowers. (BORN, 1816.	67.1	43.1	55.1	17	56 3	58 7	31 5	25 9	2	3 14	146
27	S	Avena flowers.	65.8	45.2	55.5	21	55 3	59 7	32 6	13 10	3	3 8	147
28	Sun	SUNDAY AFTER ASCENSION.	67.6	44.8	56.2	15	54 3	0 8	34 7	52 10	4	3 0	148
29	M	Common Sorrel flowers.	66.9	44.8	55.8	13	53 3	1 8	41 8	21 11	5	2 53	149

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 67.1°, and its night temperature 44.3°. The greatest heat was 91° on the 26th, 1847; and the lowest cold, 26°, on the 23rd and 25th, 1863. The greatest fall of rain was 0.97 inch.

ROSES IN GROUPS.



HERE are few of the readers of THE JOURNAL OF HORTICULTURE who do not feel deeply indebted to the Rev. W. F. Radclyffe for his most excel-

lent and practical hints on the cultivation of the Rose, his favourite flower, given from time to time in these pages. Nor can we feel less sensible of the honour done the "queen of flowers" by "D., Deal," Mr. W. D. Prior, and other amateur horticulturists in their articles. I cannot but observe that these gentlemen pay especial regard to their favourite flower, and having their energies rivetted, as it were, on one or two particular subjects are enabled to be more successful and acquire a greater insight into these than we gardeners are able to

do from the great variety of subjects daily demanding our attention. No wonder then that they are so well qualified to give advice, and that their papers are read with so much interest as being the experience of those who well understand the subject, and are, besides, enthusiastic in their love and treatment of the Rose. I fully believe that our distinguished Rosarian of Tarrant Rushton is possessed of a florist's eye, and views the Rose through no other, whilst there cannot be a doubt of "D., Deal," not seeing any merit in those Roses that will not go through the ordeal of an examination by florists. The circular form is all-powerful with a florist. A Rose must not only be of good habit, possess fine healthy foliage, and be profuse and continuous in its blooming, but it must have a certain shape of flower, much substance of petal, and open well, or it will not suit a florist. His standard is that of a good flower; he does not mind so long as he can obtain a few good blooms from a plant so that he may exhibit them in a stand on a certain day, and by the merits of the flower alone the judges award the prizes, little being known of the habit and hardiness of the plant. Gardeners, on the other hand, require the flower to be not only of good shape or form, but profuse-blooming and lasting, enduring rain and sun, and opening well in all weathers; the plant hardy and vigorous, but not rampant. Whatever its habit it must bloom profusely, have fine, bright, bold, and healthy foliage, and be of good constitution generally. As to colour, we want this bright and decided, and not the colours that run with rain and fade with sun, and we could do with some good whites, which are scarce, and more of the true rose colour, but not one more of the crimson scarlets, unless decided improvements on the old ones. These are the Roses wanted for general purposes—good hardy Roses that are effective when in

bloom, or out of bloom through their foliage, fine for cutting, and also of fine form, such as Mr. Radclyffe recommends to be obtained by the hundred. Those that are inconstant and only open in certain seasons, and give but few flowers and fewer of them of good shape, are not suitable for general cultivation.

Besides these we want good Roses of dwarf, yet free, compact habit for groups or beds, the more free and continuous-blooming the better. A slight degree of imperfection in the flower is more tolerable than fine form with scarcity of bloom. A combination of hardiness, dwarf habit, profuse foliage and bloom, and a continuance of them is what is much wanted for groups. Good continuous-blooming Roses for groups are what we may long and wait for; but it would tend to hasten the attainment of the object in view if those amateur rosarians who grow new Roses for trial would record their experience of the kinds that, from their habit and profuse blooming, are adapted for beds, and give us their notes of the old which they have tried and not found wanting. Groups of Roses are highly pleasing when in bloom, and more encomiums are passed on them and more time is spent in looking at them than at all the rest of the flower garden. Everybody likes Roses, but their charms cannot be fully appreciated unless the blooms are seen in quantity. A score of varieties is not half so effective dotted here and there as when grouped in one spot with room for them individually; and a dozen, again, will be much more effective when planted in a group of one colour or variety than a hundred scattered here and there.

Dwarfs are the only description of Rose suitable for grouping, and they are best on their own roots. The next best are those on the Manetti stock, grafted or budded so low as to have both the stock and scion or bud covered with soil, so that they may derive nourishment from their own roots as well as from those of the stock. On their own roots they do better on dry, sandy, and gravelly soils than when on any stock with which I am acquainted; whilst those on the Manetti seem as if they do not care what kind of soil they grow in. The Manetti, though the best of Rose-stocks, and very desirable for grafting or budding Roses on in cold wet localities and strong soils, where it is not troublesome on account of its throwing up suckers, is rather troublesome in this respect in light soils, and in such these Roses do much better on their own roots. The Manetti after the first or second year does not cause trouble on the score of suckers, even in light soils, if pains be taken to remove the eyes when the cuttings are made, and to take these out afterwards quite close to the stem with a sharp knife. From carelessness or neglect in doing this effectually the Manetti stock sometimes sends up suckers, but it is never half so bad in this respect as the Dog Rose, which is of no value for light soils, its strength being expended in suckers, and, besides, Roses on it are short-lived. On cold, wet, heavy soil the Dog Rose is more at home, but even there it will throw up suckers, and these are extremely difficult to get rid of when the

Roses are planted closely or pegged down. There is no Rose suitable for our climate and for grouping that is not better on its own roots, and such alone are to be recommended, subject to conditions of soil and situation.

The ground intended to be planted with Roses should be well drained, dug deeply, and have a liberal application of well-rotted manure worked in. If the soil is light, the addition of strong loam from a pasture will be of service, and where it is little else than sand or gravel take the old soil out to the depth of 18 inches or 2 feet, and replace with strong loam—the top spit of a pasture, mixed with one-fourth of manure. If, on the contrary, the soil is very stiff, sharp sand or even road sand mixed with it will be of service. The bed should be formed rather high to allow for settling, and be raised in the centre, and if prepared in the autumn and forked over occasionally during the winter in dry weather, it would be in better condition for planting. May is a good time to plant out of pots in groups; March is better when the plants are taken from the open ground or are not in pots. Two feet apart is a sufficient distance to plant them, the first row being 18 inches from the edge of the bed if they are to be pegged down, if not pegged down they may be planted even nearer the edge, especially the smaller kinds of China Roses. When strong plants are to be planted, the most suitable times are November and December for summer Roses, and February and March for these and autumnals; they may be a yard from plant to plant, and should not be less than 2 feet from the edge of the bed. In planting, the roots may be shortened a little, but only those which are long and straggling, and the holes ought to be made sufficiently large to contain them without cramping. Avoid deep planting; from 3 to 6 inches is a sufficient depth to cover the roots, using rich compost for that purpose. If turned out of pots loosen the ball and disentangle the roots.

After planting mulch the surface with 2 or 3 inches of short manure, if planted in spring, having previously watered well. The manure is to be pointed in prior to giving the bed a good watering during the first dry weather. Instead of giving water in small quantities and often, reserve all for a good drenching when necessary, and keep the surface of the bed open, for what will let out the moisture will assuredly admit air and the night dew. Syringe the foliage as often as we may, it can hardly be done often enough to keep down aphides. If these be allowed to remain undisturbed a viscid substance will be deposited on the leaves, ultimately turning to a black fungus, and then we may bid farewell to healthy Roses. Give them plenty of water, and keep the surface open, and they will thrive. Do not attempt to peg the shoots down the first year, but thin these out to three, half a dozen or so, according to their strength. They will make strong shoots the first year, and be suitable for pegging down in autumn or spring. If this is done in autumn the ground should be forked over, and the shoots laid down at their full length, excepting the unripe portion of the shoot which may be reduced—say a three-foot shoot to 2 feet, and others proportionately. Lay them regularly over the surface, removing the soil near the stem so that the bend may not be too abrupt, otherwise the shoot may break. When pegged down place 3 inches of short littersy manure on them, covering the whole surface; this will act as a protection, and through this the shoots will come in spring, and give a carpet of bloom in due season. I have not tried any of the more choiced kinds in this way, but have every reason to believe it would answer well for the more delicate Teas and Chinas, which are mostly cut down to the ground by frost. It was common to treat the Provence in this manner some years ago, and finer beds of China Roses I have not seen than the following:—Clara Sylvain in the centre of a bed, with Madame Bureau round, the two forming a group of white Roses; Fabvier, scarlet; Mrs. Bosanquet, blush, with Cels Multiflore, also blush, round it; a crimson bed of Cramoisie Supérieure; one of Prince Charles and Carmine Superbe; another of Madame Bréon and Augustine Hersant; and, finally, a bed composed of Etna, Virginie, and Archduke Charles—all Chinas, and every one blooming from June to October. They were pegged down towards the end of November or early in December, pretty freely pruned or cut back, and then covered over with from 1 to 2 inches of short litter. The soil was light, and they did not suffer in the least from frost. China Roses, and, perhaps the

most chaste and beautiful of all Roses in groups; they are so neat in habit and so profuse in their blooming. They should be pegged down in summer if the growth is at all irregular, but rather loosely.

Another mode of pegging down Roses is to encourage the strong shoots that come from the base of the plant, and in the following spring to peg these down regularly over the surface, merely cutting off the ends of the shoots, the ground being previously forked over and a liberal dressing of manure given. The plants so treated send up strong shoots from the base, and these are thinned or disbudded to from four to six joints according to their strength. The old shoots, or those previously pegged down, are cut away in autumn, and the shoots of the current year are pegged down in their stead either in autumn or spring. A number of short stubby shoots arise from those pegged down, and on them flowers are produced abundantly, and the effect is very good. The majority of the Roses that require close pruning do well in this way, and it is a good old practice well worth reviving.

Roses, however, are fine in groups, whether pegged down or not, and in the latter case the flowers though less plentiful are finer. There is scarcely a Rose which is not in some way beautiful; but I now ask for information as to what kinds are the most suitable for groups on lawns. They must have good flowers, be profuse-blooming, have fine healthy foliage, and be of dwarf habit, and so hardy as to be proof against ordinary winter frosts. I also wish to know what are the best stocks, or whether they are better on their own roots? I may observe that Roses on the Dog Rose produce numerous suckers not from the stock, as in the case of the Manetti, but from the roots, and the latter run so far underground as to give much trouble in finding out whence the suckers spring. In light soils so many suckers are produced by the Dog Rose, and the Roses worked on it are so short-lived, that in my opinion it is of no value for dwarf plants. Where the situation is cold and moist, and the soil strong, Roses for groups do best when budded or grafted low on the Manetti stock, so low, indeed, that the plant may be on its own roots as well as derive support from those of the stock continuously, or for a time at least. For light soils and dry situations I have nothing to advance against it, only it requires plentiful supplies of water, and liberal treatment. Lastly, Roses are infinitely better on their own roots where the soil is dry and light, if afforded abundance of water to keep them cool, and liberal dressings of manure. These are the conclusions at which I have arrived, from my own experience in places situated widely apart, and in different soils.

The treatment of Roses in groups does not differ from that recommended for those pegged down, as regards soil, watering, &c.; but they are planted 2 feet apart for the moderate, and 3 feet apart for the more vigorous growers, and are pruned so as to be always kept low, higher in the centre of the group, and lower at the sides, the shoots being stopped during summer so as to give as even a surface as circumstances will permit, and all decayed flowers broken off. The shoots, if strong, should be stopped at the eighth joint, and at the sixth if moderately strong, and this throughout the season. An inch of short and cool manure spread over the surface will be beneficial during the summer, and a loose frequently-stirred surface is better than a fine smooth one. It may seem inconsistent to mulch the surface, and frequently point it over, but the soil should be stirred early in June, and then mulched; all watering after this will wash some nourishment into the soil, and the mulching being forked in after the first and principal bloom, healthy growth and better autumn-flowering will be encouraged.

I have had the following in beds or groups, and though they were good in some respects, they had their failings, not being continuous blooming enough generally. Perhaps some of your Rose correspondents will give us the benefit of their experience.

CHINA ROSES.—Cramoisie Supérieure, crimson scarlet (makes a fine group); Fabvier, scarlet; Cels Multiflore, blush or pale flesh; Madame Bréon, rose; Clara Sylvain, Madame Bureau, and the old white, sometimes called Lady of the Lake, whites; Prince Charles, red or carmine; Archduke Charles, rose changing to crimson; Mrs. Bosanquet, flesh; Citoyen de Deux Mondes, crimson; Eugène Beau-

harnais, deep crimson; Marjolin, deep crimson; Elise Flory, rose; Eugène Hardy, and Infidélité de Lisette, rosy blush. For edgings or small masses by themselves, the Miniature China, or Fairy Roses, are pretty. La Desirée; La Gloire, crimson; Le Pompon, rose. These and all China Roses require a light, rich, well-drained soil, and protection in winter. A few inches of litter on the beds will protect them sufficiently in mild situations, adding a few spruce branches stuck thinly in the beds in December, removing them gradually in spring. They should be pruned quite close in April, and if nearly to the ground they will grow the more freely. The shoots may be pegged down in summer; the effect is charming. In some instances it would be better to take them up in November, lay them in a cold frame, or under a wall, protecting during severe weather, and plant in the beds again in March. Such treatment is necessary in cold localities.

BOURBON.—Emotion, French white; Baron Gonella, rose; Catherine Guillot, rose; Baronne de Noirmont, rose; Reveil, crimson; Madame Angelina, fawn shaded salmon (too tender); Victor Emmanuel, and Sir Joseph Paxton, purplish crimson; and Souvenir de la Malmaison, flesh colour. They are best worked on the Manetti in strong ground, but are good on their own roots, on light, well-drained soil. Liberal treatment and close pruning are necessary.

TEA-SCENTED.—Madame Bravy, and Madame Villermoz, white with rosy centres; Rubens, white shaded rose; Gloire de Dijon, fawn (fine when pegged down); David Pradel, rose; Bougère, light rose; Devoniensis, creamy white; Auguste Vacher, fawn; Sombreuil, lemon; Vicomtesse de Cazes, yellow; Le Pactole, lemon, yellow centre; and Abriçoté, fawn. Treatment the same as for the China Roses.

HYBRID PERPETUAL.—Géant des Batailles, Lord Raglan, Maréchal Vaillant, Pæonia, Sénateur Vaisse, Le Lion des Combats, Duchess of Norfolk, Général Jacqueminot, Baronne Hallez, Madame Charles Wood, Madame Laffay, and Charles Lefebvre, all crimson, scarlet, or crimson scarlets; Abd-el-Kader, Jean Baptiste Guillot, Duc de Cazes, Triomphe d'Angers, Princess Mathilde, and Murillo, shades of purple; Jules Margottin, Louise Odier, Madame Boll, Baronne Prevost, Louise Peyronny, Comtesse de Chabillant, Caroline de Sansal, Auguste Mié, Comte de Nanteuil, Madame Knorr, Madame Vidot, and Adelaïde Fontaine, rose and pink shades; Impératrice Eugénie, Louise Damaizin, Louise Darzins, Madame Canrobert, and Virginale (too delicate), white shades. These Hybrid Perpetuals are fine groupers.

All the preceding are pretty nearly autumn bloomers, and some of them continuous from June to November.

HYBRID PROVENCE.—Blanchefleur, and Princess Clementine are white, and make charming beds in their season, when pegged down or otherwise.

MOSS.—Reine Blanche, white; Crimson or Damask, carmine; Common (not yet beaten), blush; Vandaël, violet purple; and Frederic Soulié.

PROVENCE.—Cabbage, deservedly a great favourite; Unique Panaché, white rosy stripes, and the old White or Unique.

GALLICA OR FRENCH.—Boula de Nanteuil, purplish violet, shaded slate; Shakespeare, crimson; Éillet Parfait, white, striped red; Ohl, crimson; and Perle des Panachés, white, striped pink.

HYBRID CHINA.—Beauty of Billiard, red. Trained on a wire over a bed its effect is good, and so is that of Madame Plantier, white.

HYBRID BOURBON.—Paul Ricaut and Charles Lawson, the one a crimson, and the other rose.

These summer Roses are unrivalled for gorgeous masses of bloom in their season, and do well pegged down. They are best worked on the Manetti, except the more common, which do better on their own roots.—G. ABBEY.

MRS. CHITTY AND HER CHILDREN.

THE time has now arrived when the subscription in behalf of the gardener's widow and her babes will be closed. With the closing there has come, naturally and properly, the time when it is meet and right to render public thanks to every one of Mrs. Chitty's kind and liberal benefactors, and also it is the proper period to state, for the satisfaction of all

those who have generously come forward to assist, what are Mrs. Chitty's plans and prospects.

The widow thanks, from her very heart, every one who has given; she gives equally warm thanks to the wealthy who have given so liberally of their wealth, and to the poorest who have given as much—viz., a little of their very little. From her good husband's good master, who headed the list with ten guineas, and the generous widower (mark the force of well-directed fellow-feeling), who gave three sovereigns, to "Little Willie Earley," with his sixpence, and the "Three Workmen in a Garden," with their fourpence each, she thanks all. How sufficiently can I express for Mrs. Chitty the heart-cheering she has had each week, from kind gifts, and sometimes from kind letters. She feels, with proper pride, that he who was her husband so bore himself in life as to be honoured when in his grave, and she accepts all that has been given as given in testimony to his worth. Those who read this will be glad to learn, that as yet not one farthing of the money has been touched. This shows plainly that as far as they possibly could, Mr. and Mrs. Chitty have been careful and provident.

Mr. Webley engaged at once a single gardener in her late husband's place, thus assisting her with a lodger, kindly also allowing her something a-week, while Mrs. Webley sends two of the children to school. Upon my suggestion (one which Mr. Webley approves), Mrs. Chitty will presently open a shop in the village in which she resides, she being well liked where she is well known. Her friends best able to give an opinion, believe she will get on nicely. Every one has been kind to her. Her excellent clergyman has the care of the money; her landlord has offered her a good house, suitable for lodgers, and having a good shop. "As soon as the baby can walk" (touching little domestic incident), if not before, the business will be entered into, and the shop will be opened. Your money, kind subscribers, will thus enable Mrs. Chitty to start in business; you have given the means wherewith the shop will be opened—but for your liberality, so suitable and efficient a bread-winner could not have been dreamed of. Thus the widow has found warm-hearted and liberal friends near, among those who knew her personally; and equally good friends afar off, who felt respect for her late husband, and sorrow for her lone condition.

Good, kind subscribers all of you, you have lifted a heavy load of care from off a sad heart, which if it cannot beat as happily as formerly, will yet be (owing to you) a peaceful, a thankful, and a contented heart. Little cheeks will grow plump owing to you; and as the comfortably-dressed children will walk to the house of God, their mother will think of your kindness and liberality, and be saved, we trust, all her life, from that poverty which depresses the mind, and is as little a friend to the soul as to the body.

Accept, then, this letter as if written by Mrs. Chitty. I thank you all for her. If the reward of our Master was to follow the giving of the cup of cold water, much more shall you find that your christian liberality, like mercy

"Is twice blessed, it bleaseth him that gives."

as well as her to whom is given.—WILTSHIRE RECTOR.

THE FROST OF APRIL 30TH.

IT would be interesting if some of your numerous readers would record in your pages the degrees of frost on the night of April 30th. I have heard that in Surrey and Kent it was severe enough to kill the young shoots of Oaks, Walnuts, Ash, &c., and to do much damage to the fruit of Plums, Cherries, and Pears.

Here, in Hertfordshire, the thermometer on the morning of May 1st registered 27°, or 5° of frost. The young shoots of Oak were not injured, Walnuts had the tips of their leaves blackened, but have quite recovered. The young shoots of Picea cephalonica also escaped, as has all the fruit of Cherries, Plums, and Pears.

At Chiswick they registered 9° of frost, this must have been most destructive.

Here we had not had any rain, so that the earth was quite parched. I have always found that when dry, young fruit and tender vegetation will bear 5° of frost without injury—not so in moist weather.

It will, I think, be interesting to some of your readers if

you will tell us when the meteorological day ends. I am induced to ask this from observing in your record of the minimum temperature, and also in that of Chiswick, that I am always a day before the records. For instance: the minimum temperature of 23°, which you give as happening on the 30th of April, did not take place till the morning of the 1st of May, accordingly I enter it as taking place on that day; but I find, as stated above, that in the Chiswick, and also in your "Meteorological Observations," it is entered as taking place on April 30th. Does the meteorological day last till the following morning?—T. R.

[The Chiswick meteorological day is reckoned from 8 A.M. to 8 A.M. again, and the highest and lowest temperatures which have occurred during the interval are registered to the day to which the first 8 A.M. belongs. Thus, the lowest temperature in the twenty-four hours between 8 A.M. on the 30th of April and 8 A.M. on the 1st of May was 23°, or 9° below freezing—that indication, therefore, is put down to the 30th of April. This is the practice of meteorologists generally.]

CROSS-BREEDING STRAWBERRIES.

THE statement made at page 362, only referred to Strawberries grown out of doors, and my friend, Mr. Standish, gives it a wider scope than I intended, when he applies it to plants under glass, and subjected to an artificial mode of treatment. There is no analogy between the two modes of culture, and no progress (as far as the million are concerned) can be looked for from seeds obtained from forced plants. My basis of argument is, therefore, different from that of Mr. Standish.

As to a large number of Strawberry plants going blind when forced, experienced growers know that some varieties are better adapted for forcing than others, and the cause of their becoming blind is also pretty well known. I have practised successfully this branch of culture for thirty-five years, and for ten of these consecutively. After a series of experiments, I found that the runners of the preceding year allowed to establish themselves around the parent plant, are those which offer the best chance of success, if in the following September they are taken up with all their roots and leaves, and planted singly in pots 4 inches in diameter, and 5 inches deep, half an inch being left for drainage. It is unnecessary to state here what compost should be used; the Strawberry takes soonest in a good rich compost in which the fibrous roots can run. In potting care is taken to give these roots an oblique direction from east to west, following the course of the sun, and to pot the plants up to the neck in order that adventitious roots may be produced, as well as fibrils and spongioles. Plants with a large, compact, well-furnished crown are the best. After potting, the pots should be placed in a spot sheltered from the sun's rays and drying winds; but when the plants have taken fresh root they are exposed to the sun. Here the crown becomes firm and more solid, and it is from a well-established crown of this kind that perfect flowers and fine fruit must be expected. The footstalks of the flowers spring from the sides of the crown at the points where the runners are emitted, but the crown nourishes them by developing the leaves which draw towards the flowers and fruit the nourishment taken up by the spongioles. The crown must not be excited till the approach of the shortest day, or soon afterwards. This is the time at which the sap of all plants begins to become active, and their seeds to germinate, when placed in a moist artificial heat. If, notwithstanding these precautions the flowers prove abortive, their doing so must be attributed to too high a temperature, to want of sufficient air, or to too little water being given, from one or other of which causes the organs of fructification have been imperfectly formed.

Whilst writing these lines I have received a letter from a constant reader of THE JOURNAL OF HORTICULTURE, who, living in the country, has both the leisure and desire to experiment in raising varieties from seed, and he asks for further information on a point in one of my articles—namely, the choice of the seed of the Strawberry.

Though I positively have not the time to reply to this kind of correspondence, still as my views on the subject may be of some interest to others as well as himself, I willingly

accede to his request, hoping, however, that it will be the last time I may be called upon to write upon the Strawberry, being anxious to take up a subject of greater importance.

The seeds of the Strawberry, as any one knows who has eaten the fruit during half a century, are dotted over the surface of the fruit, or sunk beneath it in little pits. When a variety possesses desirable qualities, and the plants have been well grown, are vigorous, three or four years old, and have been in the same position for two years, we see arise in spring from the two sides of the plant and its subdivisions around the crown, two, three, or four foot-stalks each 3 or 4 inches long, and producing at the end of the pedicels from five to ten or more flowers. Which of these flowers is it best to retain in order to have perfect seeds? That which is in the midst of the corymb, and which has the thickest pedicel, allowing each plant to bear only two or three fruit. The whole of the sap being directed towards these, they ought to exhibit the full degree of perfection as regards form which the variety possesses, and the seeds ought to be large, and have a high degree of vitality, especially if the fruit has been allowed to ripen perfectly. In order that this may be the case, the fruit attached to its pedicel and the common footstalk, is laid along a flower-pot placed on its side.

When the fruit is gathered the upper part is taken off and thrown away, and the middle portion all round the fruit is alone preserved. The seeds are left in their receptacles to complete their ripening, and become solid. This portion of the fruit is kept in a paper bag, open at top, hung up in a place with a mean temperature of from 50° to 60° till the time of sowing. The most suitable period for doing this is in the course of January. The seed is sown in pots, or pans, of light sandy soil in the same way as other small seeds, and they are barely covered, bedewing them lightly and placing a glass over them. The pots are then placed in a pit or greenhouse, and as near as possible to the glass. When the radicle and plumule are perceived, some light soil is scattered over the surface, and when the seed-leaves have grown a little, the seedlings are pricked out singly in small pots, watered gently but freely, and placed close to the glass on a shelf in a greenhouse. By the end of March the young plants will have gained some degree of strength, and if the weather is favourable they may be placed out of doors. In April or May they may be planted out 18 inches apart, and to prevent mistakes the runners are cut off as they appear. Not unfrequently young fruit are perceived on these seedlings in the following July, but it is only in the second year that their merits can be judged of with any degree of certainty. To every plant remarkable for its growth, fine fruit, or other qualities, a piece of stick is placed as a distinctive mark. In September these plants are numbered regularly, taken up along with their runners, and planted 3½ feet apart in a bed by themselves. There the task of studying them and noting their qualities should be carried on, and it is not completed up to a certain point until after the second year of bearing—that is, till four and a half years after sowing.

The remaining seedlings, those not marked and planted by themselves, are replanted after throwing away all those which from their growth and bearing are not satisfactory to the raiser. It is rare to find among such plants a variety of particular merit, for a really good seedling usually exhibits its characteristics when eighteen months old, and these are pretty generally maintained even in yearling plants. This observation likewise applies pretty generally to all other seedling fruit trees.—J. DE JONGHE, Brussels.

MR. DE JONGHE says that when he hears of any one having artificially fertilised a flower of any hermaphrodite Strawberry he doubts the truth of the statement. I am perfectly confident that I made seven or eight distinct crosses last summer. The plan I adopted was this: Early in the spring I potted plants of the varieties intended for the seed-bearers. These I placed in a glass structure, from which insects were carefully excluded. As soon as it was possible to do so I turned back the corolla of every flower (I only left five on each plant), and with a sharp-pointed pair of scissors cut away and threw out of the house the stamens and anthers. So soon as the flower was perfectly expanded, and about noon, I carried the pot to the bed con-

taining the varieties the pollen of which I wished to use, and carefully dusted this over the flower of the plant from which the anthers had been removed. I repeated this operation the next day.

When the fruit became ripe I peeled the seeds thinly off, and spread them with a blunt knife on the surface of pans prepared for the purpose, and then after sifting a little light soil over the seed plunged the pans in coal ashes. Some of the seeds vegetated at once, but the severe winter killed a good many of the plants. However, about the beginning of March numbers of little plants appeared in all the pans, save one, which contained seed from May Queen fertilised with British Queen. I cannot satisfactorily account for my non-success with this cross, since I raised a number of plants two years ago from the same parents, and, indeed, I have about a dozen of the breed on further trial, though I fear there is not one really good amongst them.

Several bloom as early as May Queen, but though superior in size and flavour they did not last year ripen so soon. I suspect, as Mr. Radclyffe observes, that not one in a thousand seedlings is better than varieties already out.—P.

SULPHUR FUMIGATION—NECTARINES SETTING SPARINGLY.

MR. RIVERS, in his "Orchard-House," speaks of a "13-inch pot, half filled with unslaked lime, to be saturated with four or five gallons of water, and then sprinkled with 1 oz. of sulphur," as a remedy for red spider in an orchard-house. I have tried this plan, and the result is—the lime is so saturated that the pot is full of a liquid pudding, destitute of heat, and the sulphur is not in the least affected. Will you kindly tell me whether this scheme is a good and safe one? and whether I am right in supposing the proper way to be to use so much water as will bring the lime to a hot powder, and then sprinkle the sulphur on it? I have no red spider, but am anxious to be prepared.

Will you also tell me whether Nectarines are considered more shy in setting their fruit in orchard-houses than Peaches? Mine were loaded with bloom, but have set sparingly, while Peaches have to be freely thinned. The calyx of the Nectarine blossom seems to dry up, and remain tightly enclosing the young fruit, which it fairly strangles, and the fruit drops. This has been the case with thousands of mine. The trees are in the highest health and finest foliage, and are treated just like the Peaches, among which they stand. You will observe, from my note, that the Nectarines do apparently set, but when the calyx should crack, and shell off, it remains on, which looks like the young set fruit.—C. P.

[You have used too much water for your lime. The sulphur should be applied before the heat goes off, or it will be of no use; and there is such a difference in the strength of lime, that we are always afraid to recommend the plan, except to those well initiated in such matters. One thing should be kept in mind—never to expose the sulphur to a greater heat than 170°, if you wish to be safe. As you are not troubled with red spider, we would recommend a free use of the syringe, and, if you have walls or wood, daubing them with sulphur where the sun will shine freely on them.]

Your case of Nectarines refusing to swell, and throw off the calyx, whilst Peaches next to them do so freely, is just one of those cases which could not be explained without knowing all the particulars of their culture, &c., since last August. Very probably the very luxuriance of the trees may have something to do with it, as the wood might not be sufficiently ripened. Deficiency of moisture, and too much at a time, will also cause the evil, but not to Nectarines more than Peaches. We never received the letter you allude to.]

REMOVING FLOWER-STEMS FROM TULIPS.

In your No. 216, under the above heading, you say, "We do not expect any particular good will arise from cutting off the flower-stalk unless it shows symptoms of seeding, when it had better be taken off." Allow me to make the

following remarks:—If the Tulips are the common selfs now used for bedding purposes, it may be of little consequence what is done to them; but if they are the beautiful varieties of fancy Tulips, formerly in such repute, then the cutting down would be, I consider, injurious to the bulbs; by leaving the stalk until it withers, the bulb discharges its superabundant sap, but if cut down the sap is prevented from being discharged, and the consequence is that the next year the delicate varieties blow with too much colour, or the colours run and improperly blend together, and the true character of the flower is spoilt. When the bulb shows symptoms of seeding, cut off the seed-vessel, but in all cases leave the stalk to ripen and wither.—W. H.

ROYAL HORTICULTURAL SOCIETY.

MAY 16TH.

FLORAL COMMITTEE.—Another very successful meeting was held on this day. It is most encouraging to see how well these alternate Tuesday meetings are supported and appreciated; and it must be very evident to all interested in the Society's welfare that a new, vigorous, and healthy spirit has come over the Fellows, who now so numerous attend these meetings. Putting aside the interest taken in the new plants, flowers, and fruits, which are specially brought before the Committees on these days, the valuable and interesting collections of plants, many of which have passed their ordeal before the Committee, and received the award of their respective merits, which are now exhibited both for comparison and in confirmation of the judgment of the Committee, give an additional and very beneficial interest to these meetings. The special thanks of the Society are due to both the amateurs and nurserymen, who so kindly contribute them.

The awards on this occasion were as follows:—Mr. Veitch received first-class certificates for the following new plants: *Odontoglossum cordatum*, a beautiful Orchid, suited to a cool temperature; *Anætochilus Dominii*; *Goodyera Dominii*; *Bertolonia guttata*, a very beautiful-foliaged plant, with deep rose-coloured spots on its dark green leaves, a pleasing contrast with *B. margaritacea*, with its pearl-like spots; *Pleroma* species, a very beautiful kind, with large bright purplish flowers; *Bertolonia pubescens*, with bright green leaves, each deeply marked with a broad black band down the centre; *Retinospora obtusa nana aurea*; and *Philodendron* species. Special certificates were awarded to Mr. Veitch for *Rhododendron Veitchii*, a very handsome plant, with large pure white flowers, exquisitely scented; for his collection of Orchids; also for his very magnificent collection of plants, in which were several new Azaleas and others.

Mr. Wills, Oulton Park, exhibited two seedling Zonate Pelargoniums not in condition; Mr. Southby, Clapham, two seedling Zonate Pelargoniums, Black Prince and Golden Queen; the latter it was requested should be seen again later in the season. Mr. Salter, Hammersmith, received a first-class certificate for *Polygonum filiforme variegatum*, a hardy plant; also for *Sedum Telephium variegatum*, a very beautiful plant. Mr. Smyth, gardener to Lord Sondes, had a first-class certificate for a seedling *Boronia* (*Drummondii*?) *alba Smythii*. Mr. Bull received a first-class for *Calonyction sanguineum*, a stove climber, with dark reddish brown leaves, a useful and very quick-growing plant; and *Ficus Porteana*, with very long leaves, an extremely handsome-foliaged plant. Among Mr. Bull's collection were *Dioscorea anætochilus*, the plants too small to judge of its merits, which were generally thought promising; *Mimulus Lucifer*, a hybrid from *M. cupreus*; *Acer polymorphum foliis dissectis variegatis*; *Azalea Queen of Beauties*, very pretty and pleasing in colour; *Lychnis senno variegata* from Japan; the plant not having sufficient flowers upon it, made it doubtful whether the variegation would prove constant and permanent. He also sent four specimens of *Amorphophallus*, one of the curious but not uninteresting genera of Arads, remarkable for producing its oddly-formed spadix and one leaf, which is divided into three branches, with more or less divided segments; and a very inferior variety of *Polygonum filiforme variegatum*. Messrs. Backhouse, York, received first-class certificates for *Myosotis rupicola*,

one of the most beautiful of the Scorpion Grasses, of extremely dwarf habit, found on the Teesdale mountains. A letter from Messrs. Backhouse informs us that the identical plant exhibited was growing two days previously on a mountain covered with snow. *Androsace chamaejasme* and *Andromeda fastigiata* likewise came from the same exhibitors.

Mr. Turner exhibited an extensive and valuable collection of Tulips, which were well arranged and carefully named. A special certificate was awarded them; also to a fine collection of Azaleas. W. W. Saunders, Esq., exhibited an interesting collection of Arads, containing specimens of *Amorphophallus*, &c. Mr. Thompson, Ipswich, had a first-class certificate for *Aquilegia cœrulea*, a very pretty Columbine; and Messrs. Henderson, Wellington Road, received special certificates for a fine collection of half-hardy bedding-out plants, *Centaureas*, &c.; also for a general collection, including stove and greenhouse plants. J. Bateman, Esq., received a special certificate for a beautiful and well-grown specimen of a Bornean Orchid, *Cœlogyne pandurata*; and a similar award was made to Mr. Smith, gardener to H. S. Norris, Esq., for *Renanthera coccinea*, an Orchid not often seen in flower. Mr. Culley, gardener to W. W. Buller, Esq., received a special certificate for three specimens of *Cypripediums*, among them a very fine specimen of *C. caudatum*. A special certificate was awarded to J. Day, Esq., for his superb specimen of *Dendrobium densiflorum*, awarded at the previous meeting but omitted to be signed.

FRUIT COMMITTEE.—J. B. Haig, Esq., in the chair. Mr. Earley, of Digswell, sent a collection of six dishes of dessert Apples in competition for a prize that was offered for this class, and Mr. Earley being the only exhibitor, and his collection being in admirable condition, he was awarded a first prize. Mr. De Jonghe, of Brussels, sent specimens of *Bezi Mai Pear*, some of which were soft, they could not be called melting, and the Committee was of opinion that it is not equal to *Bergamotte Esperen*, which is now in season. He also sent a variety called *Basiner*, a crisp-fleshed Pear, having some relation to *Beurré de Rance* in that respect; but it was not considered a desideratum. Mr. Ingram, gardener to Her Majesty at Frogmore, sent a number of small Pears, the interior of which was quite a nest of small grubs, the larvæ of some insect, which, Mr. Ingram states, is creating great havoc among the Pear crops in the Royal garden.

At the scientific meeting the Duke of Buccleuch, the President of the Society, took the chair. This, like the preceding meetings, was well attended, and, as will be seen by the above reports, the collection of plants, &c., exhibited was very interesting.

The Rev. Mr. Berkeley, in proceeding to point out the most remarkable objects, took occasion to advert to a variegated *Sedum* or *Sempervivum* which had been exhibited at a previous meeting, and which, not being in flower, had puzzled everybody to determine what it was. He had now found that it was a plant once common in cottage windows—the *Sedum aizoides*, of De Candolle's "*Plantes Grasses*." It was said to be originally introduced into this country from Madeira; but Mr. Lowe, who had studied the flora of that island for twenty years, had not found it there. With reference to the *Nardoo* exhibited on the 18th ult., it was stated that there were several species. *Marsilea salvatrix*, on the spores of which the expedition of Burke and Wills had subsisted, was the least common; and he found that the sporangia of the plant sent by Lady Dorothy Nevill differed materially from those of *salvatrix*, and belonged to *M. Drummondii*. Passing on to the Orchids exhibited, Mr. Berkeley briefly noticed *Odontoglossum cordatum*, *Cœlogyne pandurata*, *Dendrobium Wardianum*, *Cypripedium caudatum*, and *Orchis fusca* from the South of Europe, differing, he said, slightly from our own form of the same species. Orchids, as their cultivators were well aware, were liable to be destroyed by fungi, and it was very desirable that these should be investigated, in order that their attacks might be prevented or a remedy found. As an example of the damage which they do he instanced a leaf shown him by Mr. Pilcher at the last meeting, and which was almost entirely destroyed by a mosaic fungus consisting of radiating threads, forming at different points little bundles. These, on being magnified, were found to be a mass of threads, which, though no doubt

reproductive, were not the real fructification. All growers of plants were aware how destructive fungi are to the roots of plants; and he cited two *Deodars* planted near Sir W. Hooker's house at Kew, one of which grew well, and the other would not grow at all, and on the latter being dug up it was found that it had been planted where an old Cherry tree had been cut down; and in his own garden several plants had died suddenly from fungi attacking the roots. Now, it was generally considered that one fruit tree would not grow where another had been, and this was attributed to the exhaustion of the soil by its former occupant; but the true explanation of the cause he believed to be the fungi existing on the old roots attacking those of the newly-planted tree. Among the variegated plants exhibited particularly worthy of notice were a beautiful variety of *Arundo donax*, and *Ilex Fortuni*, which he had been informed by Mr. Fortune, is very beautiful in its own country where it is much used for hedges. In speaking of a *Podocarpus* exhibited at the last meeting, he had mentioned that the white shoots might give off green ones, but that plants could not be propagated from those which were entirely white. There was, however, a remarkable exception to this rule, which he gave on the authority of M. Barral, of the *Jardin des Plantes*, at Paris, who stated that the variegated *Ground Ivy* though perfectly white struck root, but the plant ultimately lost its variegation altogether, becoming quite green. Some plants, however, produced parts perfectly colourless, as instances of which, two plants in the room, *Mussaenda frondosa* and the beautiful *Clerodendron Thomsonae* were adduced. Among plants remarkable for their beautiful foliage, were "*Dioscorea anætochilus*" (?) and *Bertolonias guttata*, the leaves of which were set with little jewels formed at the base of the hairs. Some hybrids raised by Mr. Dominy, and shown by Mr. Veitch, were remarkable as having been effected between what were considered two very distinct genera—namely, *Goodyera* and *Anætochilus*, and the habit was far more hardy than that of the *Anætochilus* in general. With regard to *Rhododendrons*, a curious fact was stated by Mr. McNab—namely, that he obtained totally different varieties by fertilising with the shorter stamens instead of the longer. He (Mr. Berkeley) had mentioned on a previous occasion the poisonous properties of *Rhododendron cinnabarinum*, and by way of contrast he would now add, that in India the flowers of *R. arboreum* were boiled down and the juice made a good jelly. This, however, was not the only instance of parts of the flower being employed for such a purpose, for one of the best of jellies, the *Rozelle*, was made from the fleshy calyxes of *Hibiscus subdariffa*. Mr. Berkeley then commented on the Alpines exhibited by Messrs. Backhouse. Few things were more lovely than the *Myosotis*, which though it came from the Teesdale Mountains was also to be found on Ben Lawers. Another gem was *Andromeda fastigiata*, nearly related to, but not the same as, *Andromeda hypnoides*. Of *Retinospora obtusa aurea* Mr. Veitch stated in a letter that it was the finest variegated plant in Japan, not even surpassed by *Thuja aurea* itself.

Among other plants noticed were *Calonyction sanguineum*, a climbing plant with large bronzy leaves, several *Arums*, and *Ficus Porteana*, which though a stove plant, bears a good deal of exposure, from its leaves being excessively coriaceous. A *Begonia* leaf from Mr. Earley, Digswell, producing a multitude of young plants from the petiole, was also exhibited as a curiosity.

The awards of the Floral Committee were then read by the Rev. J. Dix, and the objects submitted to the Fruit Committee commented on by Dr. Hogg; after which the Duke of Buccleuch, in proposing the usual votes of thanks, said that he believed these meetings were of very great service to the Society, and the public at large, for not only were the things seen, but their advantages and peculiarities were pointed out, and, as in the case of the fruit, the best varieties were made known. From the number present the scientific meetings must be of very great interest, and the Saturday meetings had been very acceptable to numbers of persons who could not attend on Tuesday. In conclusion, he congratulated the Society on its improved financial condition.

A ballot for plants then took place. Fifteen new members were elected.

CRYSTAL PALACE SHOW.—MAY 20TH.

This was the first of the great Shows, and never, probably, during the time that flower shows have been held in the Crystal Palace has so fine an array of the best specimens of English horticultural skill been presented at this or, indeed, any other season. The day was warm, the sky cloudless, and the sun bright, all of which are conducive to a large attendance of visitors; and whether it was from the amplitude of the ladies' dresses, the immense number of the visitors, or the length of time which they lingered around the tables, we never remember any exhibition so crowded as this, and in the afternoon to take notes of the objects shown was, in some cases, an impossibility, and in all little more than a passing glance could be obtained. The brightness of the day, however much it contributed to the financial success of the Show, was not without its inconvenience, for, notwithstanding that an awning was suspended over the tables, the plants in many instances, particularly the Azaleas, presented a very different appearance from what they did in the morning. The Roses, too, unfortunately had been placed where the sun had reached them, and though lovely even then, much of their freshness and beauty was gone. It should be borne in mind that the sun ought never to be allowed to touch a full blown Rose, for nothing can be more destructive to its beauty; yet the plants, though coming from shady houses with a temperature of 60° to a sunny one of 80° or more, from being in robust health, stood the change better than could have been expected.

STOVE AND GREENHOUSE PLANTS.—The specimens of these were large and generally excellent, though there was not much novelty among them. Being also shown in great numbers, they formed a very effective part of the display. Among them were many fine plants of Allamandas, *Stephanotis floribunda*, *Pimeleas*, *Eriostemons*, *Aphelexes*, *Azaleas*, *Ericas Cavendishii* and *depressa*, *Epacrises*, *Ixoras coccinea* and *Griffithi*, *Chorozeas*, &c. An *Allamanda grandiflora* from Mr. Peed was one of the most beautiful we have ever seen; it was so free-flowering, so graceful, and so pure in colour. *Rondeletia speciosa*, with its beautiful scarlet blooms, was also fine in Mr. Whitebread's collection; and a variety of *Azalea sinensis*, bearing a profusion of large yellow flowers, formed a conspicuous object in that of Mr. Rhodes. A charming plant of *Acrophyllum venosum* came from Messrs. Lee; and from Mr. Fraser, Lea Bridge, the beautiful *Clerodendron Thomsoni*, one of the best additions which have been made to exhibition plants of late years. The flowers for the most part were not fully expanded, but the multitudes of snow-white calyxes, with which the plant was studded, rendered it a remarkable object, especially when contrasted with flowers of brighter hues. *Medinilla magnifica*, with numerous long thyrses of flowers, and *Prostanthera lasiantha*, were also conspicuous in this collection. Good plants of *Rhynchospermum jasminoides* were shown by Mr. Williams, Mr. Baxendine, and others; *Mahernia incisa*, an old Cape plant, now seldom seen, by Mr. Smith, Norwood; the fine white *Rhododendron formosum*, and *Azalea Criterion*, a dense mass of bloom, by Mr. Carson; and the showy *Combretum purpureum* and *Diosma speciosa* by Mr. Kemp. In mixed collections of flowering and ornamental-foliaged plants, a beautiful plant of the elegant *Gleichenia semivestita* came, along with *Crotons*, variegated *Yuccas*, &c., from Mr. Williams; whilst in the collections of Messrs. Lee and Mr. Young *Cordyline indivisa*, *Cyathea Smithii*, and *Theophrastas* were well represented. An excellent plant of *Alocasia metallica*, the foliage in all its beauty, was also shown by Messrs. Lee.

Prizes were awarded as follow:—For sixteen, first, Mr. Peed, gardener to Mrs. Tredwell; second, Mr. Whitebread, gardener to H. Colyer, Esq., Dartford; third, Mr. Kaile, gardener to Earl Lovelace. For ten (nurserymen), first, Messrs. Lee; second, Mr. J. Fraser; third, Mr. Rhodes; fourth, Mr. Baxendine. For ten (amateurs), first, Mr. Carson, gardener to W. R. G. Farmer, Esq.; second, Mr. Page, gardener to W. Leaf, Esq.; third, Mr. Chilman, gardener to Mrs. Smith, Ashted House, Epsom. For six, first, Mr. Kemp, gardener to Earl Percy, Albury Park; second, Mr. C. Smith, gardener to A. Anderson, Esq. For twelve fine-foliaged and flowering plants, first, Mr. Williams, Holloway; second,

Messrs. Lee; third, Mr. Young, gardener to H. Stone, Esq., Leigh Park, Havant; fourth, Mr. Rhodes.

HEATHS.—There was a good bank of these, and on the whole the specimens were very good. Among them we noticed a fine plant of *Sindryana*, several fine plants of *ventricosa magnifica*, one of the best of its class, *odora rosea*, nice plants of *depressa* and *Devoniana*, and one or two beautiful examples of *Victoria*.

The prizes awarded were:—For ten, first, Mr. Rhodes. For eight, first, Mr. Peed; second, Mr. Page. For six, first, Mr. Wheeler; second, Mr. Chilman; third, Mr. C. Smith, Messrs. F. and A. Smith; extra, Mr. Kaile.

AZALEAS were placed at the four corners where the nave and transept intersect, and some truly magnificent specimens were exhibited. Mr. Turner took, as usual, the lead. Among his plants were *Gledstanesi*, exhibiting a more than usual disposition to sport, some of its flowers approaching the character of *Etoile de Gand*; *Arbores purpurea*, remarkable for its violet purple colour, so rare among Azaleas; *Juliana*, *Perryana*, *Geni*, *Barclayana* sporting to rose; *Coronata*, *Etoile de Gand*, many of its flowers wholly salmon-coloured; *Illustris nova*, the flowers nicely relieved by foliage; *Iveryana*, and *Criterion*. In other classes very good plants were shown by Messrs. Lane, Lee, and Williams; and Mr. Carson had excellent plants of *Iveryana*, *Murrayana*, *Double Red*, *Broughtoni*, *Triumphans*, *Duke of Devonshire*. Interesting collections of varieties, sent out since 1860, were exhibited by Mr. Turner and Messrs. Ivery. Prizes—For eight (nurserymen), first and second, Mr. Turner; third, Mr. J. Fraser; fourth, Mr. Rhodes. For eight (amateurs), first, Mr. Carson; second, Mr. Whitebread. For six (nurserymen), first, Messrs. Lee; second, Messrs. Lane; third, Mr. Williams. For six (amateurs), first, Mr. Penny; second, Mr. Peed; third, Mr. C. Smith; fourth, Mr. Kaile. For new Azaleas, first and second, Mr. Turner; third and fourth, Messrs. Ivery.

ORCHIDS taken in the aggregate made a glorious display, though the individual specimens were not, as a rule, remarkable for their size. Their condition, however, indicated good and careful cultivation. Foremost came a fine collection of twenty from Mr. Bullen, grown in pots with open slits at the sides, extending nearly from the rim to the base of the pot. They had been well prepared for exhibition, and were set up with great care, and Mr. Bullen deserves credit for having brought them from Leicester in such good condition. They consisted of *Cypripedium barbatum superbum* with two score blooms; *Phalenopsis grandiflora*; *Camarotis purpurea*, a plant which requires some care in its cultivation; good *Vandas*; *Calanthe veratrifolia*, an old plant but still useful for exhibition; *Dendrobium macranthum giganteum* and *Lindleyanum*; a fine mass of *Cattleya Skinneri*, the rosy purple flowers of which are very effective; *Saccolabium curvifolium*, &c. In other collections, besides *Vandas*, *Cattleyas*, *Lælias*, *Erises*, *Saccolabiums*, *Phalenopsis*, and *Dendrobiums* in plenty, we noticed the pretty white and yellow *Chysis bractescens*, the more recent *Chysis Limminghi*, *Odontoglossum Pescatorei*, the curious pale green and white *Brassia verrucosa*, several fine examples of *Dendrobium nobile*, *D. formosum*, with several of its large white and yellow flowers; *D. macrophyllum giganteum*, with a spike nearly 2 feet long; *Trichopilia crispa*, very fine; *Phajus Wallichii*; *Cyrtopodium punctatum*; *Cypripedium caudatum*, with two fine flowers, and the new *Phalenopsis Luddemania*, both from Mr. Wilson; *Cattleya Acklandiae*, and *Sobralia macrantha*.

Prizes for twenty, first Mr. Bullen, gardener to A. Turner, Esq., Leicester; second, Mr. Baker, gardener to A. Basset, Esq.; third, Mr. Page. For ten, third, Messrs. Lee. For twelve, first, Mr. Penny, gardener to H. Gibbs, Esq., Regent's Park; second, Mr. Wilson, gardener to W. Marshall, Esq., Enfield; third, Mr. Young. For six, first, Mr. Bullen; second, Mr. Wiggins, gardener to W. Beck, Esq., Isleworth; third, Mr. Wilson and Mr. Chilman; fourth, Mr. Robson, gardener to G. Cooper, Esq.; Mr. Wheeler, gardener to J. Phillpot, Esq.

PELAGONIUMS.—Both show and fancy varieties in fine bloom were exhibited by Mr. Fraser, Mr. Turner, and Mr. Wiggins. Of the former we noticed *Etna*, *Sir Colin Campbell*, *Fairest of the Fair*, *Peacock*, *Leviathan*, *Sylph*, *Gul-laume Severyns*, a peculiar lilac purple, *Lilacina*, pale lilac.

white eye, and dark top, Ariel, white with carmine spot, Desdemona, and Celeste, orange scarlet, white eye, and scarlet top, a very pretty variety. For twelve Mr. Fraser was first, Mr. Turner second, and in the amateur's class for ten Mr. Wiggins took the first position. In Fancies Mr. Fraser and Mr. Turner took the same relative positions. The former had Cloth of Silver, Arabella Goddard, Delicatum, Celestial, very fine, Roi des Fantaisies, and Queen of the Valley. In Mr. Turner's six the most noticeable were Ellen Beck, Celestial, Evening Star, and Roi des Fantaisies.

ROSES.—In the Nurserymen's Class for ten distinct varieties in 13-inch pots, Mr. W. Paul was first with remarkably fine plants of Souvenir d'Elise Vardon, Louise Odier, very fine, Madame Villermoz, Souvenir d'un Ami, Senateur Vaisse, Paul Perras, Madame de St. Joseph, Catherine Guillot, and Comtesse de Barbantanne. In the collection of Messrs. Lane, who were second, we noticed Charles Lawson, Anna de Diesbach, large and fine, also Souvenir d'un Ami. In the Amateurs' Class for six, good plants were shown by Mr. Terry, gardener to A. G. Puller, Esq., Youngsbury, for which he received a first prize. The class for twelve Roses in eight-inch pots was also a good one. Here Mr. Turner was first, Messrs. Paul & Son and Messrs. Lane second. Mr. Turner's plants were remarkable for their fine condition, both as regards foliage and bloom, particularly Souvenir de la Malmaison, Senateur Vaisse, Madame Villermoz, and Charles Lawson. Good collections, as well as cut blooms, were also shown by Messrs. Paul & Son.

MISCELLANEOUS.—A very extensive and interesting collection of new plants came from Mr. Bull, comprising the new Japanese Aucubas, double Mimulus, his new variegated Verbena and Chrysanthemum, Zonate Pelargoniums, Petunias, and other objects, which have been noticed in recent Floral Committee reports. Mr. Robson, gardener to G. Cooper, Esq., sent the beautiful new Phalenopsis Lüdemanniana; and Messrs. Ivery, Dorking, four new varieties of hardy Ferns, all of which received first-class certificates—viz., Athyrium Filix-femina Fieldiae compositum, ramo-cristatum, and two Scolopendriums, one of which, called variegatum, had a beautiful golden tinge in the fronds. Mr. Turner sent Liliun auratum, and a fine stand of Tulips; Messrs. Downie & Laird, and Mr. Shenton, Pansies; and W. Hoyle, Esq., Reading, a beautiful new Pelargonium, Charles Turner, which received a first-class certificate. It is a fine bright scarlet, with a dark top and white eye. From Mr. Turner came Pelargonium Marion, which also received a first-class certificate—rose, with a very dark top and a large white eye—a showy variety; also Elegans, rose and crimson lower petals, conspicuous white eye, and dark top. The pretty white-flowering Deutzia crenata flore pleno was shown by Mr. Shenton, Clematises by Mr. Townsend, Beaton's Geraniums by Mr. W. Paul, and a number of tastefully-filled plant cases by Messrs. Barr & Sugden.

FRUIT.

For so early in the season there was a tolerably good show of fruit as regards quantity, and the quality was fair.

In Pines Mr. Mills, gardener to Lord Carrington, High Wycombe, was first with a good Providence; Mr. Page second with a Cayenne weighing 6 lbs., and third with a 4-lb. Queen, one of the same weight from Mr. Barnes, Bicton, being fourth. Mr. Standish, Ascot, had a third prize for a good Smooth Cayenne, and he likewise exhibited, growing in a pot, a kind called "Abacachi," stated to be the most luscious of all Pines. In Grapes Mr. D. Clements took first, second, and third prizes with well-coloured good bunches of Black Hamburgh; and first and second prizes for very good baskets, Mr. Hill, Keele Hall, being third. Muscats were all unripe. Mr. Cawkell was first, Mr. Horwood second, Mr. Tansley third. Excellent bunches of Foster's Seedling were shown by Messrs. Lane, and Buckland Sweetwater by Mr. Embury, gardener to J. Drew, Esq. In Peaches Mr. Horwood was first with Royal George, Mr. Turner second, Mr. Farrance third; and in Nectarines Mr. Turner had the first prize for an excellent dish, the only one shown. In Melons the best were a Hybrid Green-fleshed, and a Hybrid Scarlet-fleshed, from Mr. Enstone, gardener to Sir T. Duckworth, Bart., Wear House, Exeter; and Mr. Horwood, and Mr. Lynn, gardener to Lord Boston, were second in each class respectively. Of Cherries only two or three dishes were shown. Messrs. Jackson, Kingston, had a

second prize for May Duke. Of Strawberries remarkably fine dishes were shown by Mr. Smith, of Twickenham, and Mr. Standish. The former was first in the class for three dishes with British Queen, Sir C. Napier, and Empress Eugénie; the latter second with La Constante, very fine, Oscar, and Sir C. Napier. With the last-named kind Mr. Smith and Mr. Standish carried off the first and second prizes in the class for single dishes of fifty fruits. Mr. Horwood, Mr. Kalle, and others, exhibited good dishes, and some plants in pots were also shown. Mr. Carr, gardener to P. Hinds, Esq., Byfleet, was awarded an extra first prize for a cluster of Musa Cavendishii weighing 79 lbs. He also sent several kinds of Capsicums.

CULTURE OF ORCHIDS IN LOW TEMPERATURES.

ORCHIDS have a great deal of vitality, and are capable of bearing more rough usage than persons in general would give them credit for; in short, they are not easily killed, and will linger on a miserable existence even under the worst form of treatment. But there is a great difference between keeping them alive and growing them to perfection, and from what little experience I myself have had of Orchids I am quite sure that there are very few, if any, that can be satisfactorily grown under the cool treatment—I mean by a cool treatment a temperature such as Camellias and Azaleas like best in winter. *In medio tutissimus* is always a safe maxim, and does not mean mediocrity as some persons would aver. The "golden mean" is nearer the truth, and if any person will keep this maxim before him, and will also remember that common sense and common care are at the bottom of all good gardening, he will find that the generality of Orchids are far from being a difficult class to deal with. The cool treatment of Orchids is only a reaction from what to my mind is a far more unsuccessful plan—that of growing them in a very hot close atmosphere, tied on blocks of wood with hardly a portion of nourishment to the roots. I remember that, some fourteen or fifteen years ago, I never could see a collection of Orchids without seeing a great many poor starved specimens dragging out a miserable existence, with shrivelled bulbs and spotted leaves, wired on to baskets or blocks of wood, and I used to be told, if I remonstrated, that Orchids in their natural state were found growing on trees in tropical climates, and that this was the nearest way to imitate nature. Now, apart from the fallacy that we ought to imitate nature in cultivation, I always asserted, and still assert, that we cannot imitate a tropical climate in our Orchid-houses. It does not, however, at all follow on that account that we cannot grow Orchids quite as fine as any that are found in a natural state. It is not the science of gardening to imitate nature, but to improve upon the way in which plants are grown in a state of nature, taking nature as our guide. It has never fallen to my lot to see Orchids growing in the tropical jungles, but though the beauty of the plants is enhanced by the surrounding scenery, I am assured, and I feel tolerably certain it is true, that finer individual specimens are to be found in cultivation than those which are growing in their wild state. I am, however, digressing. I wished to add the results of my own slight experience with Orchids to the remarks which Mr. Findlay made in your Journal of the 11th ult.

Before I lived here I used to grow some Orchids in an early forcing vinery, at the warmest end, about fourteen or fifteen different species, including good specimens of *Stasheopea tigrina*, *Celogyne cristata*, *Dendrobium nobile*, *Pierardi*, &c., *Cattleya Mossia*, *Bletia Tankervillei*, &c. The house was forced to ripen Grapes about the middle or end of July, but the Orchids had comparatively little heat in November and December. With this treatment they grew and flowered well; they seemed to like the shade of the Vines, and made rapid and strong growth. When in bloom they were taken into a cool conservatory near the house, where they continued in bloom a long time, and the colder house never seemed to injure them; *Celogyne cristata*, especially, used to continue in bloom for three months. When I came to live here I built a greenhouse against the house, and seeing how well these Orchids had stood the greenhouse when in bloom, I thought I would give them a

trial here. I brought hither the very same plants, but though they grew and made bulbs with the cooler treatment they never ripened sufficiently to bloom, and after three or four years' experiment I had to give them up, as they never ripened their bulbs sufficiently to throw out blooming shoots, and it was very unsatisfactory to see each year's pseudo-bulb smaller than that of the previous one. The conclusion I am inclined to draw from this is, that any persons who have vinerias for early forcing can grow Orchids in them with ease, and they will find that the actual shade of the Vines is beneficial; but it is leading persons astray to make them imagine that they can grow Orchids with any degree of satisfaction in houses such as are so commonly built for bedding plants and hardwooded plants, as Camellias, Fuchsias, &c., though there may be some kinds of terrestrial Orchids, as *Cypripedium*, and *Bletias*, which will do with comparatively little heat.

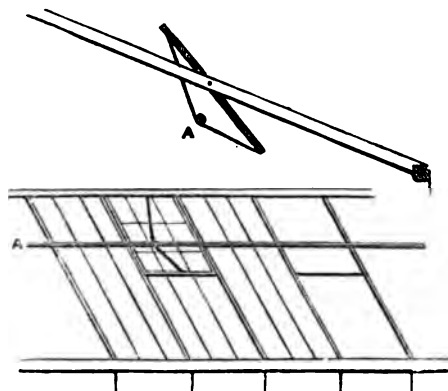
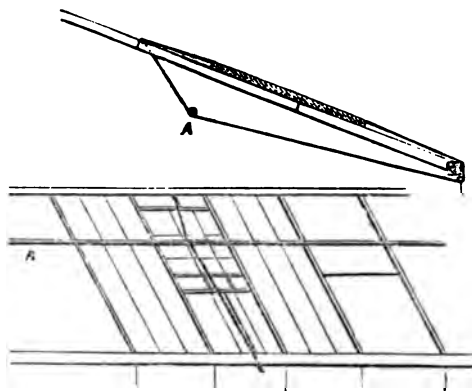
Orchids, as I have said before, are very hardy plants in their way, they will stand greater changes of climate than

most plants; as an instance of this a plant of *Stanhopea tigrina* stood the frost of Christmas, 1860, when scarlet Geraniums alongside were killed, and the same plant was accidentally left out when there was more than 10° of frost, and even then not even the younger bulbs were injured. They have, indeed, to undergo great changes of temperature in tropical climates, as I remember a cousin of mine in India, on the march near the foot of the Neilgherries, telling me his tent was frozen stiff in the morning where Orchids were growing and blooming over his head, and the temperature during the day on their march was as high as 120° in the shade; but, as Mr. Findlay justly remarks, because ice is often found on Orchids in their natural state it does not at all follow that it would be good for them in our houses, and it is no argument in favour of a generally cool treatment. I hope that others may give the results of their experience on this subject, for although I have given up the attempt to grow Orchids in a greenhouse, I am still interested in the subject.—X. Y. Z.

OPENING SASHES.

I SEND you the following sketch of an idea which, I think, may be of use. It can be employed either for sliding sash

or balance pivots. A is a simple roller suspended about 6 inches or more from the sash-bars, and a cord, once twisted



around the bars tightly, so as to prevent any chance of slipping, is fastened at each end to the top and bottom of the sash. A crank at the end of the roller turns it, and as the rope is shortened one end is correspondingly lengthened,

the other allowing of opening, and yet preventing it opening more than one wants by wind or any cause, unless the roller go with it.—(*American Gardener's Monthly*.)

ORCHARD-HOUSE FRUIT TREES SHEDDING THEIR FRUIT.

I HAVE had a small orchard-house for two years, and this spring I have had an extraordinary show of bloom on my Plum, Peach, and Nectarine trees, but the fruit does not set well. Two or three trees of Rivers's Orange Nectarine were covered with an excess of bloom, and were blooming all through the bright sunny weather we had two and three weeks ago; but although the trees are large, and have been well established in 13-inch pots, I have scarcely a fruit on them. They had plenty of air both night and day; were well watered at the roots; the bees were always at them, so that the pollen would be well distributed; but they were never syringed until the petals had fallen.

One of my friends, whose house is filled with Apricots, Peaches, and Nectarines loaded with fruit, comforts me by telling me that the red spider last year weakened the vitality of my trees so much that they could not carry their fruit this season; but the Elrue Nectarine, and the Royal George Peach, are carrying fair crops in my house.

Another of my friends suggests that the syringing the trees with river water, when the petals had just fallen, has chilled the fruits by the water lodging within the calyx. Will you favour me with your opinion?

With regard to Plums in pots, the fruit seems to set pro-

fusely; but when it has reached the size of a Radish seed it ceases to grow, and drops off. How am I wrong here?—T. G.

[It is difficult to assign a reason for your fruit of Peaches, Nectarines, &c., dropping. Our own, against the back wall, have done so a little this season, and the blossom was very fine. We believe that if we had thinned the blossom well it would not have happened. The bees did us also a little mischief, by carrying off the pollen before it had quite done its work; but we shall have enough. The trees in pots set very thick, and we wish we could get at them to thin them. Thinning the blossom is a good plan, but we could not do so. The trees against the wall opened bloom first, and the bees worked much on them. It is bad practice to syringe too soon. We have no doubt that our large trees suffered for want of water last season. However, we shall have pretty well enough even where thinnest.]

RATS DESTROYING ROSE TREES.—Have any of your readers who are Rose-growers ever been troubled by rats? This year I had rows of standards nearly destroyed by them, until I succeeded in catching the marauder in the act. The Roses are now showing a few shoots, but some

are dead. Some of last year's budding that were not started are completely destroyed, not only the buds being gnawed out but the bark off also.—G. H.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus, the beds will be greatly benefited by liberal waterings with manure water from the stable or farmyard tank, especially where the "grass" is weak. *Beans*, as soon as the pods begin to form at the lower part of the stem top the plants, which will materially forward the podding. Earth up the successional crops after a shower of rain. *Brussels Sprouts*, prick out the early sowing to strengthen them previous to finally planting them out. *Cauliflowers*, the early crops to be liberally supplied with water; if very large heads are required manure water may be given them, but for private families those of a moderate size are generally preferred. *Cucumbers*, as they advance in growth under the hand-glasses peg them down. Water them in the morning when they require it, but this should only be done when a fine day is likely to follow. In pruning away any of the shoots and leaves cut close to the main stem: this we are aware is a disputed point, still we believe the wound heals quicker than if a piece of the stalk is allowed to remain until it gradually rots away. *Endive*, let a sowing be made directly. *Kidney Beans*, let full crops be planted forthwith. *Parsley*, thin out the plants of the early sowing to 6 inches apart; more seed may now be sown. *Peas*, continue to earth up and stick the successional crops. As soon as the early crops begin to pod supply them with plenty of water to swell the produce. At the time of sowing, during dry weather, water the drills after they are drawn and before the seed is sown. *Radishes*, sow the Long Scarlet and Turnip; water every evening during dry weather. *Savoy*s, prick out some of the earliest sowing, and also the seedling plants of Scotch Kale; shade for a few days until the plants take fresh root. *Sea-kale*, remove the pots and also the covering as soon as done with, and afterwards dig between the plants. *Spinach*, thin the early crops, and sow again for succession. *Tomatoes*, plant out against walls. *Vegetable Marrows*, plant them out under hand-glasses. The Broccoli season being now nearly over, the stumps to be all cleared away and the ground dug, or if intended for Celery trenches, these may be prepared without digging the whole of the ground. Keep all the salading crops well watered in dry weather. As soon as the spring-sown Spinach is fit for use dig in the autumn sowing.

FRUIT GARDEN.

This is a busy time among fruit trees, as they require almost constant attention to keep them in good order. As disbudding goes on and they are divested of superfluous shoots, let a good washing follow; this will destroy the insects, and cleanse the fruit and trees of dead flowers, cobwebs, &c. Water Strawberries in blossom, cover the rows with old pit-linings, chiefly half-rotten leaves, and water over this. Remove some of the watery wood from the Currant bushes. Thin Raspberry suckers. Attend to regulating the growth of trees designed to be trained in any particular form, stopping useless shoots to throw more strength into those that are wanted. Let water be applied by the engine every morning to Peach trees, and to others newly planted, and let the latter be kept mulched and watered at the roots.

FLOWER GARDEN.

That the proper keeping of the garden may be as little interfered with as possible through the litter and confusion consequent on "turning out," use every despatch to bring this work to a finish; but if any portion of the stock is not sufficiently prepared, allow it to remain under glass as much longer as may be necessary, and plant out nothing but strong plants that have been carefully inured to the sun and air, for weak and ill-prepared plants are so much at the mercy of the weather that it is folly to depend upon their covering the ground in any reasonable time. Give sufficient water to settle the soil about the balls of the plants the first warm morning after planting, and give no more until the soil becomes dry, unless warm dry weather should set in, and then a gentle sprinkling every morning will greatly

benefit the plants. Spare hand-glasses will be useful now for the propagation of favourite spring-blooming plants, as Pansies, Phloxes, &c. These do best on a shady border. Evergreen shrubs recently transplanted to be watered both at the roots and overhead. Roses will require attention; it is as well to remove unnecessary shoots at once. *Calceolarias* and *Petunias* are particularly selected by slugs, the beds being frequently watered will induce these depredators to visit them; a few cabbage leaves may be used as a trap. Dahlias, too, are liable to the attacks of slugs; a little soot round the stem will be a protection. Masses of American shrubs under or near large trees to receive a top-dressing of some kind to keep them cool, and to compensate for the exhaustion occasioned by the roots of the trees. A coating of bog earth, half-rotten leaves, or old tan will be suitable. Walls, trellises, or ornamental arcades to receive attention at this period.

GREENHOUSE AND CONSERVATORY.

Some of the hardier stock in the conservatory, such as hybrid *Rhododendrons*, *Camellias* forming buds, and *Orange* trees in tubs or pots, may soon be set out of doors. This will give more room to such plants as must remain, both on account of their tenderness and the display they make. A sheltered spot should be selected out of doors, but by no means under the drip of trees. Let *Pelargoniums* have weak liquid manure occasionally; also *Cinerarias* and *Calceolarias*. The Chinese *Azaleas*, which have been some time growing, should be kept in heat until they have set their buds, when they may be removed to the open air. A stock of common and Anne Boleyn *Pinks* for forcing, and the flowering tree *Carnations*, should likewise be brought forward; the latter are valuable acquisitions.

STOVE.

Cultivate, and forward as soon as possible, the various kinds of young stock intended for flowering through the autumn and winter. The *Euphorbia jacquiniiflora* looks well if planted three in a pot. The *Gesnera elongata* should not be forgotten, nor *Begonia manicata* and *incarnata*. Some of the *Justicia salicina*, the *Geisomeria*, &c., will be useful. For *Orchids* keep up a large amount of moisture in the air, and syringe the blocks frequently. Every attention should now be paid to keeping down vermin; nothing short of extermination should ever satisfy the zealous cultivator.

PITS AND FRAMES.

Roses are, perhaps, more generally admired than any other class of plants, and bloom freely in the conservatory in autumn and early winter if properly attended to at the right time. Young plants of the perpetual-flowering kinds, as *Teas*, *Bourbons*, *Hybrid* and *Damask Perpetuals*, if placed in a cold frame and properly attended to with pot room, and liberally supplied with manure water, will soon form nice-sized specimens; but in order to secure their blooming freely in autumn and early winter, the flowers must be picked off as they make their appearance, and strong stocky growth secured by giving abundance of air, exposing the plants to the night dews, and keeping the shoots stopped and tied-out as may be required.—W. KEANE.

DOINGS OF THE LAST WEEK.

Now in most places comes the trying period of the season, in these modern times, when, in the month of May, and the beginning of June, the head of the gardener must be turned into a sort of almanack and annual register, whilst his hands would require to be magically increased some three or fourfold. Everything in-doors and out of doors is crying out for attention, and happy ought they to be who can attend to everything at once, as soon as it wants that attention. "Do it at once," is a capital axiom, and should ever be kept in mind by those who resolve on being orderly and methodical, and without orderly arrangement there will be muddle, and doing and undoing, and no little waste of shoe leather; but the difficulty is, "to do it at once," when a dozen of things want this doing, and, perhaps, only one pair of hands, and one pair of feet left to do it. In such cases, thoughtful arrangements must be made, so that whilst doing some things thoroughly, other things should not be allowed to suffer. "Cannot be done," must now be pretty well banished from the gardener's vocabulary, if he wish

to pass through life not only pleasantly, but respectably and honourably. The "can't be done" folks will soon be left behind in the race. The old gardeners who thought they worked wondrously hard some forty years ago, would find, if practising now, what with bedding-out and other work, that gardening in their younger days was mere child's play as respects labour with head and hands, compared with what it is at present.

We make it a rule to discourage all young people from taking to gardening as a profession, unless after due trial they find they have a peculiar taste and fitness for such a pursuit, have a strong relish for study and mental expansion, and are not afraid in the first place of self-sacrifice, hard living, and hard work. All the romance, picturesqueness, and poetry of the affair, without these natural aptitudes and tastes, will be apt to dwindle down into mere routine, indifference, or discontent; and we have little faith in that buoyancy which is heavily fettered with a real, or even a supposed grievance. Just as in the case of a poet, there must be natural tastes and aptitudes to form a gardener. We have boys that with slender education know every bedding plant by name, and can easily point out the difference between those very much alike. We know labourers who have worked among such plants for a quarter of a century, and though they know one plant to be a scarlet Geranium, and another a yellow Calceolaria, they do not otherwise know the name of any Geranium, Verbena, &c., and, therefore, cannot be trusted to get plants of either without these being pointed out to them. No forcing or training could ever make such a man anything more than a person who would do what he was bid. The boys, if they did not shirk the necessary application, or become self-conceited from not knowing enough, would become good gardeners.

KITCHEN GARDEN.

Cabbages.—Ours are generally very good. We grow chiefly the Vanack and Matchless. This season they do not cabbage so well as usual, growing higher and more to leaf than heart. We see, also, that there are some rogues among them. Seedsmen should be very careful of such matters, as otherwise gardeners would be forced at a loss to save their own seed. We say at a loss, because all small private growers would save their ounce or two of Cabbage or Lettuce seed at a loss, inasmuch as they could not do it for so little money as the man who saves seed as a commercial undertaking. As the plants do not cabbage so fast as we would like them, we have put strips of mat round a score or two of them, just as we treat a Lettuce, to encourage the hearting more rapidly. A young Cabbage, green outside and yellowish at the heart, well cooked, is a dish fit for an emperor. Sowed Coleworts, Onions, Lettuces, and a little more Cauliflower, the secret for a good and not wasteful succession being simply frequent sowing.

Cauliflowers.—Pricked out in a bed, planted a row or two, and gave a good watering with manure water to those coming in that were under glasses, and the first and second planting out of doors. The glasses from the Cauliflowers will be used to protect the first.

Kidney Beans that will be turned out of pots out of doors, to come in before the first sowing in the open air. These if started in the pots before planting come in early, and enable us sooner to dispense with those in pits and frames. We have a lot bearing heavily now in pits; they are grown in pots, one advantage of which is, that we can turn them out ere long and give them a little protection. There is hardly any limit to the bearing of these Beans if the pods are kept close picked, and plenty of nourishment is given to the roots. We have grown none in houses this season—in fact, our houses are too much shaded for them to do much good there, after the standard or roof-plants are in leaf. The shade is also apt to bring insects on the plants, which will trouble them little or none at all, when they can be duly exposed to light and air, and a fair use of the syringe can be made.

Winter Greens.—Pricked out on a north border for want of a better place, a lot of Scotch Kale, Brussels Sprouts, Broccoli, Savoy, &c. Will soon have the earth-pits, now filled with bedding plants, at liberty for this purpose. These plants will be nice and stubby, and lift with balls, as soon as other crops are cleared away. This in some cases answers better than

Double and Treble Cropping the ground at once, as ably alluded to at page 377, though we have followed a similar system for many years, and would do so more had we a plentiful supply of manure. We had most of our Broccoli last season planted between Peas and Potatoes. The Potatoes were first removed, then the Peas, and the ground forked over among the Broccoli—good stiff little plants which have produced compact nice heads. In spring Potatoes were planted between the Broccoli, and Peas at some 10 or 12 feet apart, digging out a trench and dunging it before sowing. Now, a good part of the Broccoli being cut, it will be taken away, the ground forked up, the Peas staked when high enough, and when cleared of Potatoes, the ground will be used for Turnips or salads, and most likely will be trenched in winter for Carrots, or thrown out in beds for Celery with Peas on the banks. We think the shade of the Peas is of great benefit to the Celery and helps to give it what it naturally wants. We generally grow the Celery in beds from 3 to 5 feet in width, and these beds, if made in time, come in useful for early Potatoes or the earliest Cauliflower before the Celery is ready. To all who have little ground, and do not begrudge a little extra labour and manure to make the most of it, we commend attention to our correspondent's article.

Onions.—Planted out a lot of the autumn-sown—should have been done some weeks ago—merely fastened the roots in the ground, leaving the neck and bulb out. These were planted between the rows of fresh-planted Asparagus, hardly fair to the latter however, but the roots will not reach to where the Onions are until these are taken off. In thinning for this planting moved the earth from the neck of the Onions left, and placed those not wanted in by the heels in a shady place to be used for salads; the spring-sown being as yet scarcely large enough, though just the size that some people like, who dislike them when larger than a small stocking-needle. Picked over the Onions in strings, taking out all those still hard and firm, and placing them thinly in an airy place, and turning the others growing into a trench to furnish Scallions. These are generally softer than young Onions, and for those who can tolerate the scent furnish a nice relish to the labourer with his bread and little bit of pork or bacon, if they are not wanted for other purposes. Long after this fine Spanish Onions are to be obtained in the shops in London as fresh and sound as a good Turnip. How is growth prevented in the heat of the summer?

Turnips and Radishes.—Sowed more in succession. A new fly seems to be committing ravages among them and young plants of all kinds this season. At least, we have not yet seen the old Turnip fly, and judge it must be another one, though we have never seen it, but we see the effects, the leaves being nibbled and holed. Wood ashes dusted over are as good as anything for keeping them away. Spruce branches stuck among the plants are also good. Watchfulness here, too, must be exercised, if the gardener would conquer his natural enemies, and he may rest assured that whatever commiseration may be felt for the farmer, when his richly-manured fields resemble a barren waste, there will be little sympathy felt for the gardener if by some means he does not produce crisp, sweet Turnips. What sort of Turnips are those which are marked in the Covent Garden report at from 3d. to 6d. per bunch? Young Turnips at one time at this season would have been worth shillings instead of pence.

Cucumber-beds.—You will recollect how these were made for frames. The heat has kept very regular, but began to decline a little, and, therefore, a little short grass was put round the frame, and covered with long litter, so as to afford secure footing. After such addition, care must be taken to tilt the sashes for air—that is, lift them up and not slide them either backwards or forwards. The steam from such material would be anything but relished, and hence the importance of lifting the sash and keeping it up with a notched stick or other means, and not sliding the sash up or down over such linings. The topping of these linings will be all the beds will require until late in autumn. After all that can be said, the great secret for lasting hotbeds, is to build them so that there shall be a slow decomposition of their materials, and, consequently, a slow and gradual giving off of heat from that decomposition, which is just another form of combustion.

FRUIT GARDEN.

Here the chief work has been giving some water from the dunghill to Strawberry plants, and looking after a few insects out of doors on Peaches. In the latter case the tomtits have come in as our friends. During the last week we stood at our window at 4 A.M., and noticed a loving pair as busy as busy could be, peering into every hole and corner for green fly and a chance caterpillar. We must not sing or cry out until we get out of the wood; but it is so far fortunate, that as yet our trees under glass have shown no trace of insects. We are pretty well obliged to leave them to themselves; but they sadly want a day for stopping and thinning the branches. With every disposition to get through with work, we are more and more convinced, that very long hours are a mistake, a drag to the worker, and no benefit to the employer. Mind we do not take into account exceptional cases, and not often repeated, then a man and men rightly influenced will do wonders, but continue the long hours even with extra encouragement, and extra pay, for a week or two, and you will in the end scarcely have the usual amount of labour done. The human machine cannot go on like a steam engine, however you give material for combustion, in the shape of meat and drink. When no extra pay is given, and a great deal of extra work and late hours are looked for, not only will the exactors be disappointed, but really such cases ought to come under the cognisance of the Society for Preventing Cruelty to Animals. Mind this is altogether a different affair from a good worthy man, seeing that things want doing, and without even a hint, of his own accord he does it cheerfully after the usual hours. Such work should not be forgotten, and when a young man willingly does such things he should be able to visit a neighbouring garden without breaking in on the rest and repose of the Sunday.

ORNAMENTAL DEPARTMENT.

Have fairly begun bedding out, at least will before this is in print. Our last cuttings have done wonders in a short time in the slight hotbeds, dibbed out at once without pot or other vessel. Such a plan, and with bedding plants in general, is a great saving where you can plant out near at hand. It would not do for commercial people, or where the plants had to be carried far. The plants grown in pieces of turf turned out so well that we shall be inclined to enlarge the numbers of the plants so treated. We will just for the present allude to a few points.

1. Single beds filled with bedding plants will be most pleasing if edged with a shaded or contrasted colour.

2. Groups of beds if at all large will be more easily planted if the beds are edged.

3. In a regular group, no plan is more satisfactory than planting in pairs, either opposite or crossed. This is just on the principle that like draws to like. Many of our readers, merely for variety, do away with all attempts at pairing, and if it please them we have no right to find fault. As we have previously stated, if they choose to run a black and a white horse in their carriage, if they choose to paint one side of their carriage claret and the other yellow, and have the wheels on one side red and the other side yellow, that is their affair, and we have no right to intermeddle or to quarrel with their taste. The person that pays has the right to determine, even though there may seem to us to be a want of balance.

4. The heights of the plants in a group should be uniform, or there should be a regular gradation of height from back to front, from centre to ends, and *vice versa*. Many flower gardens, otherwise beautiful, are often marred from inattention to this simple matter. We can recollect of a fine ribbon-border near London planted on the flat, and the middle row dropped down a foot or more below the rest. The planter considered it an eyesore; but next season there were from blind imitation alone some dozens of borders and beds as low in the middle as the bottom of a deep dish when compared with the rim. In beds scattered about it matters less, but in a regular group the gradation of heights is a great point of success; and

Lastly, This gradation of height does much to economise the labour of the future treatment, and, besides, the plants look so much better when growing as nature intended them to do, instead of being twisted and layered by all unnatural attitudes and shapes. R. F.

TRADE CATALOGUE RECEIVED.

W. Cutbush & Sons, Highgate Nurseries, London. N.—*General Catalogue for 1885-6.*
F. & A. Dickson, 106, Eastgate Street, and Upton Nurseries, Chester.—*Catalogue of Select Bedding Plants.*

COVENT GARDEN MARKET.—MAY 20.

The supplies have again much increased during the past week, both continental and home grown, but we have not much variation to report from last week's quotations.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	2	0	to 4	0			
Apricots, Green, pottle	1	0	1	6					
Cherries.....lb.	2	0	3	0					
Chestnuts.....bush.	14	0	20	0					
Filberts.....100 lbs.	40	0	0	0					
Cobs.....do.	50	0	60	0					
Gooseberries...½ sieve	3	6	5	0					
Grapes.....lb.	8	0	14	0					
Lemons.....100	5	0	10	0					
Melons.....each	0	0	0	0					
Mulberries....punnet	0	0	to 6	0					
Nectarines.....doz.	30	0	45	0					
Oranges.....100	6	0	14	0					
Peaches.....doz.	36	0	45	0					
Pears (kitchen).....doz.	2	0	3	0					
dessert.....doz.	0	0	0	0					
Pine Apples.....lb.	6	0	12	0					
Plums.....½ sieve	0	0	0	0					
Strawberries.....doz.	0	6	1	0					
Walnuts.....bush.	14	0	20	0					

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....each	0	4	to 6	0					
Asparagus.....bundle	4	0	8	0					
Beans Broad.....½ sieve	0	0	0	0					
Kidney.....100	1	0	1	6					
Beet, Red.....doz.	3	0	4	0					
Broccoli.....bundle	2	0	3	0					
Brussels Sprouts ½ sieve	0	0	0	0					
Cabbage.....doz.	1	6	2	0					
Capiscums.....100	0	0	0	0					
Carrots.....bunch	0	7	0	10					
Cauliflower.....doz.	2	0	6	0					
Celery.....bundle	2	0	3	0					
Cucumbers.....each	0	6	1	6					
Endive.....score	2	6	3	0					
Fennel.....bunch	0	3	0	0					
Garlic and Shallots, lb.	0	8	0	0					
Herbs.....bunch	0	3	0	0					
Horseradish.....bundle	2	6	4	0					
Leeks.....bunch	0	3	to 6	0					
Lettuce.....per score	1	0	2	0					
Mushrooms.....pottle	1	0	2	0					
Mixed. & Cress, punnet	0	2	0	0					
Onions.....bushel	5	0	7	0					
pickling.....quart	1	0	1	6					
Parsley.....½ sieve	1	0	1	6					
Parsnips.....doz.	1	0	0	0					
Peas.....quart	7	6	0	0					
Potatoes.....bushel	2	6	4	0					
Radishes doz. bunches	0	6	1	0					
Rhubarb.....bundle	0	2	0	0					
Savoy.....doz.	0	0	0	0					
Sea-kale.....basket	0	0	0	0					
Spinach.....bushel	1	0	2	0					
Tomatoes.....½ sieve	0	0	0	0					
Turnips.....bunch	0	3	0	6					
Vegetable Marrows doz.	0	0	0	0					

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

ROYAL HORTICULTURAL SOCIETY'S SCHEDULES OF PRIZES (F.N.).—Apply to the Assistant-Secretary at the R. H. S.'s offices, South Kensington.

ADVERTISEMENTS (A Subscriber).—You can send postage stamps.

NEW LATE WHITE BROCCOLI (W. Paul, Waltham Cross).—When we received a specimen (May 18th), the head was perfectly firm and close; colour almost as white as that of the Cauliflower; and the incurving dense growth of leaves renders it self-protecting. The head is above the medium size, and almost a globe, being nearly as deep as it is broad. These qualities render it a very desirable late variety.

GOOSEBERRY CATERPILLARS (Dalton).—Dusting the bushes with fresh white hellebore powder will kill them. Repeat the dusting until they cease to appear, and then syringe the trees thoroughly to wash off the powder.

HEATING BY ONE OR TWO BOILERS (Eskdale).—"Whether would two lots of houses, 30 yards apart, be best heated by one boiler or two? They are new houses; two, a viney and stove in the one place, and there will be three or four pits and houses in the other." In your case we would decidedly have two boilers, as the extra expense for two boilers and extra fuel will be much less than 180 feet of piping applied to no purpose, and the heat thus lost. Besides, it is not safe doing a great deal with one boiler, unless you can have another in reserve. We know some places where the bursting or leaking of one boiler in winter would next to wreck the inmates of a number of houses, unless all sorts of extemporised stoves were resorted to.

VARIEGATED AGERATUM (H. R. C.).—The only variegated Ageratum we know, had dirty yellowish white on the leaves, and it grew from 15 to 24 inches in height. Though looking tolerably well in-doors, it was ugly out of doors. The inch you sent of a variegated dwarf one, a sport from Prince Albert, if it keep true seems to be better, as, though shrivelled, the green of the leaf was blotched with a rich yellow. So far as we could judge from such a morcel, we should say it was worth looking after, but you had better send a whole shoot or plant.

FLOWER-BUDS OF PELARGONIUMS AND CINERARIAS WITHERING (Inquirer).—We should say from want of air and want of water, and then, perhaps, excess of the latter.

GREENHOUSE EVERGREENS (Radford).—We cannot occupy our space with such a list as you require, with directions for their culture. We readily give information relative to any particular plant or subject, but for general directions you had better buy "In-door Gardening," which you can have free by post if you enclose twenty postage stamps with your direction.

SOWING HERBACEOUS CALCULARIA SEED (*Idem*).—The beginning of August is a good time for sowing it; and in a shady place, under a bell-glass or hand-light out of doors, the best place.

SEEDLING PANSIES (*W. S. D.*).—Good border flowers, but not superior or novel.

PYRACANTHA NOT FLOWERING (*A Subscriber of Some Years*).—The probable cause of the tree not flowering is too severe pruning, and the well-ripened shoots being cut off. To bloom freely it does not require very close pruning, and it, like every other flowering tree, produces fruit or berries at the upper part. To make it produce fruit or berries at the lower part, which is up-hill work, you may train in some young shoots, and these will flower in a year or two if not too much shaded by the neighbouring branches. We have it against a wall, which it covers completely, and as bushes on rock-work, the tree in the former case being close-pruned in order to cover the wall with green, and it does not bloom much and produces few berries; but that on the rockwork is seldom pruned, and it flowers and fruits abundantly. If you were to thin out or train the branches so that air and light might be admitted freely to the wood, and never allow the shoots to become crowded, but stop in August those which grow too rampant, perhaps buds would be formed, and the tree bloom, and produce its berries freely. We have little hope, however, of your making it produce berries at the lower part so well as at the upper part under any circumstances. Perhaps it would have flowered more profusely had it not been pruned.

DESTROYING INSECTS (*Idem*).—Laurel leaves will destroy green and brown aphids, thrips, red spider, and mealy bug. The way we use them is to bruise them with a mallet, and spread them on the floor or under the plants on stages in the evening, shutting up the house. The leaves are removed in the morning and the plants syringed. One bushel of bruised leaves is the quantity required for a four-light pit. Unless Laurel leaves are plentiful fumigation with tobacco is a cheaper, safer, and more certain means of destroying aphids and thrips. We have found that a handful of bruised Laurel leaves put in a can of water overnight, make a wash which few insects like; if the water is syringed over the plants in the following afternoon. We have also used them for fumigating, first bruising, and then placing them on hot cinders or charcoal in a flower-pot, and using a pair of bellows to make them burn. The house is filled with smoke, and the plants syringed in the morning. Laurel water, and the leaves both bruised and burnt, are destructive to insects, but care is required, otherwise the leaves of the plants may be seriously injured. Perhaps the most cleanly and effective of insect-destroyers is quassia water, made by boiling 4 ozs. of quassia chips in a gallon of soft water for ten minutes, and adding to it whilst hot 4 ozs. of soft soap. This, applied with a brush, will kill all the aphids family, and when syringing on the plants it kills all it touches; for syringing with there should only be 3 ozs. of soft soap to the gallon of water. Planting Potatoes in an orchard-house would not cause the trees to be infested with caterpillars, which, we presume, are what you mean by worms.

MANURE ON VINE-BORDERS—APPLYING MANURE WATER (*Omicron*).—The manure placed on the border in autumn should be removed at once. The only good it can do is to prevent evaporation from the surface, and keep the soil more uniformly moist. On the other hand it prevents the sun from heating the border, and the air from entering the soil. Remove it entirely and point the soil over a few inches deep, but not so deeply as to injure the roots. Liquid manure may be given with advantage during the growth of the Vines—that is, when the Grapes are well set, and once or twice a-week according to the weather. If the Vines are in an inside border it may be given twice a-week, but never, whether the border be inside or outside, until there is a necessity for it, which the condition of the border alone can enable you to determine. It would be better applied at a temperature higher than that of the soil. There is everything to fear from applying it too strong; it should, therefore, be applied weak, and not after the Grapes change colour. Unless you have some experience in its application you would consult your own interests by leaving manure water alone—at least give but few applications, as, for instance, give a good watering with liquid manure diluted with six times its volume of water the first dry weather after the Grapes set, and again when they are advanced for colouring. You will thus help them at the first and second swelling, and that will usually be sufficient for ordinary outside borders. When the borders are very narrow and very full of roots, more frequent applications may be given, and then it is necessary to dilute the liquid more than when given less frequently, and where the soil is less fully occupied with roots. We caution you against using liquid manure too often and too strong, judgment must tell when to give it, and care is needful not to give it too strong.

MESSEMBRYANTHEMUM COMPOST (*E. A. C. of C.*).—The main point is to provide perfect drainage, either by placing stones or pieces of pots under the beds, and to raise the beds above the surrounding level. They do well in a compost formed of turves cut 3 inches thick from a pasture where the soil is light and sandy, and laid in a heap for twelve months, turned over twice, and chopped pretty fine. To three-fourths of this material add one-fourth sharp sand, and if the loam is deficient in vegetable matter one-fourth more of well-rotted leaf mould. *Messembryanthemums* should have a sunny situation, and though capable of enduring drought better than the majority of plants, a copious watering during dry weather will be of service. Probably your climate is not sufficiently warm for the species that do not bloom. Perhaps if you were to pot and grow them in a greenhouse they would flower, planting them out in the summer only, or in May, and taking up early in October.

OPHIRE ROSE ON MANETTI STOCK (*J. Caldwell*).—This is a free-growing and good Rose but rather tender, and should have slight protection in winter. As it does not succeed with you, the soil in which it is planted is probably too highly manured, so that the roots have not taken free hold of the soil. From some cause or other it is quite certain that the plant is not healthy, and that we should attribute to the repeated applications of manure water. Discontinue these until the plant grows more freely, and water during dry weather with water only, syringing the head frequently in the evening of hot days. Remove the mulching or point it in, and keep the surface about the plant frequently stirred, but not so deep as to disturb the roots. If the plant grow no better this summer take it up in autumn, but do not cut-in the roots much, merely cut-in a little the points of those which are long and straggling. Plant in rather strong turfy loam, and place a few inches of litter on the surface around the plant as far as the roots extend. Strong applications of manure water are very injurious to a sickly plant.

FRENCH ASPARAGUS.—"I am at a loss to know what point Mr. Watson wishes to prove in sending you ten heads of Asparagus grown by L'Hérault, of Argenteuil. I stated most distinctly that my remarks applied to Asparagus grown on the French system in England, and that I never doubted Mr. Watson's statement as to the Asparagus of L'Hérault. I admit L'Hérault does grow very fine Asparagus, it being a question for different palates to decide whether they prefer the delicate or the full-flavoured. Beyond proving that L'Hérault is a successful Asparagus grower, and verifying Mr. Watson's account of it, the ten heads sent you go no way to prove my statement wrong. To do this it is necessary to grow Asparagus on the system of L'Hérault in England, which if it be at all like that I have grown on the same system, commonly known as the French, and like what I have eaten of the growth of others, will be as 'tasteless and as tough as the root of an Elm tree' for fully two-thirds of its length. Mr. Watson being about to produce some of this esteemed vegetable on the system of L'Hérault will be better able to tell us what it is like. It is not a question as to whether Asparagus grown on a certain plan in France is 'deliciously tender,' but whether it will be so grown on the same system in England, where the Asparagus is of full flavour, and nearly all, if not quite all, eatable if cut, as it ought to be, never below the surface.—GEORGE ASHLEY."

CORRATA'S VINERY (*Cast Iron*).—Any one may construct this in the forms mentioned in Mr. Rivers's "Miniature Fruit Garden," and in our columns. These forms are not protected by any patent. We do not recollect the reference to the patented heated process.

GLOIRE DE DIJON ROSE LEAVES BLOTCHED (*M. H.*).—The leaves sent were severely blotched, and this we ascribe to the excessive mulching with sheep's dung. The late heavy rains having washed the fertilizing matter into the soil the roots have taken it up in excess, the leaves have become gorged, and mildew has been the result. Syringe the tree freely in the evenings of hot days, and keep well watered at the root, but avoid mulching with very rich and fresh manure, and beware of applying manure water in too powerful doses. Lessen the mulching of sheep's-dung, or, better, remove it.

STOPPING SHOOTS OF ORCHARD-HOUSE TREES (*O. N. J., Sussex*).—The fifth leaf is time enough to top or pinch out the terminal bud of Peaches and Nectarines in pots, and the same plan may be followed with Apples and Pears, though it is as well to let them grow a joint or two more, as topping too early causes the latent buds below to break into shoots, instead of ripening into fruit-buds.

VINE LEAVES (*F. G. H.*).—There is no disease on the Vine leaves, except the least trace of rust fungus from extra feeding, and a hot, moist, still atmosphere. The holes and blotches in our opinion are produced by the sun shining on the leaves when damp, and surrounded by a high moist temperature. Early air-giving is the only remedy. 100° is rather too much with so much air. With plenty of sun we like it to do the heating during the day; but 100° is rather too much, and intimates that you keep the fire too large.

PINE CULTURE (*Pinas*).—There will be no difficulty in growing Pines planted out in a pit 24 feet by 6 feet, heated by dung and leaves only, since you can obtain plenty of those materials, and also plenty of labour. Such a pit should be from 7 feet in height at back, and from 5 feet in height at front, to a foot or two more, according as you may deem necessary. The whole might be above ground with a bank of fermenting material all round to give both bottom and top heat, the bottom of the bed being either an open chamber, or a bed formed of rough flues by clinkers, brickbats, stones, &c. The bed, however, would be more easily managed if about the half of the depth were under the ground level. Whether you had an open chamber, or a chamber of flues by clinkers, you would need about half of the above depth for stiff plants, and more if very large ones. The most economical mode would be to build with single brick on bed, with nine-inch piers every 3 or 4 feet, and to make the lower part of the wall, back and front, pigeon-holed. The linings should be at least 2½ or 3 feet in width, and 3 feet at least in depth—that is, the curb should be from 6 to 12 inches above the ground level. This would secure you heat enough during the summer months, and you could obtain top heat enough in the other months by raising the linings against the walls. If you objected to this mound in winter, you would need to make the linings fully 3 feet in width, and make a flue back and front—say 2 inches wide—with slates, or tiles, to receive heat from the chamber beneath, so as to obtain a sufficiently high atmospheric temperature without giving too much bottom heat. By this means too, all steam from the linings would be completely under control, and such a pit may be managed with much neatness by means of boards to cover the linings. Where fermenting material being scarce, such a bed might be heated by the fermenting material being placed in a chamber by means of close-fitting double doors at back and front. The linings will answer the purposes very well where there is plenty of material. It should never, however, be forgotten, that one load of fermenting material shut in directly below the plants will do more than five times the quantity placed as a lining round the bed, as the most of the lining goes to the benefit of the outside atmosphere, unless the lining is itself covered-in. With abundance of material and labour, dung and leaves may do whatever hot water, or flues, or stoves can do. The chief advantage of your pigeon-holes below will be, that the moisture and enriching gases from the linings will pass beneath the bed, and if the bottom is a little open, the roots will receive the benefit. The great point is to secure enough of top heat without too much bottom heat, and to be able to regulate the dryness or moisture of the top heat at will. A nine-inch wall would be substantial. We shall publish "A Manual of Pine-culture," in a short time.

DELPHINIUM CHINENSE (*P. P.*).—"Will seedlings of the above (2 inches high, in second leaf, and transplanted this day, May 10th), bloom this year, that is in August next?" The plants will be hardly strong enough, but will bloom in autumn if well watered.

SETTING A BOILER (*Ekdale*).—There is no definite rule for the depth of a boiler, but if you are safe from water in the stovehole, the boiler will not better if some 2 feet at least below the flow-pipe in the house. Much less will do if the water should trouble you. For a length of 50 feet the flow-pipe should rise to the extreme end from 6 inches to 1 foot, and have an air-pipe there. We have, however, had them on the level, and doing well, but we favour a slight rise.

REGENERATION OF SOCIETY (*G. Garibaldi*).—Dividing our farms into four-acre allotments will not regenerate society. Fergus O'Connor thought it would, but he would tell you he was mistaken if he could speak from his grave in Kensal Green Cemetery.

FLOWER-GARDEN PLANTING (N. C. Nenagh).—In some small groups, if on grass, it often answers well to edge all the beds with white, but in such a group as yours, containing some seventeen large beds, it would tend to promote a monotonous sameness; and though blue is not, as a rule, telling against grass, yet we would have that and other colours for edgings rather than have them all of one colour. If we edged at all we certainly would edge all the groups. You seem to understand the matter so well that, instead of giving explicit directions, it will be more satisfactory to you to dwell on a few general points. 1st. Being on grass we approve of edging blue Lobelia in 1, 3, 13, 17, with Silver Queen Geranium; but Cerastium would have been better, because it could easily be kept lower than the Lobelia. 2nd. These four clumps indicate a system of opposite pairing, which is kept up in 8, 10, and 7, 11, and therefore we do not see the propriety of cross-pairing 4, 14, and 6, 12. We would make the pairs opposite, as 12, 14, and 4, 6, and continue it with 7, 11, 5, 13, &c. 3rd. We would not have the four beds round the centre clumps all filled with yellow Calceolaria, as, with the exception of 12, 6, purple Verbena, there is no particular colour to contrast with them, and for Aurea floribunda blue is rather a better contrast. You have 1 and 3 blue and white, why not make 2 and 16 yellow and purple, and then make 8, 10, yellow and blue? 4th. As 1, 2, 3, are the three beds next the house, one of two rules as to heights ought to be observed. Either these three beds should, if anything, be lowest; and if the beds are not level they should rise gradually, at least in the centre beds, to 16, 15, 17; or 9 in the centre should be rather the highest, and the other beds fall to either end to 2 and 16. More depends on the arrangement of heights than is generally imagined. As at present proposed, your large centre bed 9 filled with Centaurea, &c., will be the lowest, and 13 and 5 will be much higher,

leaving it, as it were, in the bottom of a basin, whilst Stella in 12, will occupy the rim. That centre No. 9, with a dwarf Geranium along with Centaurea, will be your prettiest bed. Stella in No. 5 would be too high for it when seen from the walk at the house.—R. F.

CROSS-BREEDING VERBENAS (C. F. B.).—To cross the Verbena, the best plan is to slit the tube so as to allow the pollen to act on the stigma. Practically the simplest plan is to place the plants you wish to cross under glass, close together, and surrounded with netting. The wind and the bees will do what will give you some trouble and require some nicety to do more thoroughly.

CHARLOCK, &c. (A. Billimore).—The seeds of Charlock buried deep in the soil will retain their vitality for many years, and will vegetate when brought to the surface. Oats if unbruised pass through horses unharmed, and vegetate freely afterwards. There is no such thing as spontaneous generation—it is only a term for concealing ignorance of how an organised form is created.

PEACH LEAVES CURLED (J. B. Boyd).—The curling and blistering of the leaves of Peach trees on an open wall is attributed to their exposure to great changes of temperature; such curling very rarely occurs under glass.

NAMES OF FRUIT (E. G. W.).—We cannot identify the Apple you have sent.

NAMES OF PLANTS (L. D. S.).—1, *Pteris caerulea albo-lineata*; 2, *Orychium lucidum*; 3, *Cystopteris fragilis*; 4, *Platyloma rotundifolium*; 5, *Polypodium vulgare*; 6, *Hymenophyllum tumbridgeense*; 7, Not determinable; 8, *Polystichum aculeatum lobatum*; 9, *Polystichum capense*; 10, *Lastrea dilatata*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending May 20th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun. 14	29.896	29.851	53	38	54½	53½	S.W.	.02	Overcast; very fine; fine; cool at night.
Mon. 15	29.667	29.603	58	29	54½	53½	S.	.01	Slight drizzle; densely clouded; very fine; slight frost at night.
Tues. 16	29.704	29.697	64	39	54½	53½	S.W.	.00	Very fine; cloudy; fine throughout.
Wed. 17	29.905	29.858	65	38	55	53½	S.	.02	Cloudy and fine; slight rain; overcast at night.
Thurs. 18	30.189	30.034	70	31	55	53½	W.	.00	Very fine throughout; dry air; cool at night.
Fri. 19	30.327	30.290	71	37	56	54	W.	.00	Very fine throughout.
Sat. 20	30.286	30.161	75	48	57	54½	E.	.00	Very fine; hot and dry; air very dry; warm at night.
Mean	29.996	29.927	65.14	36.43	55.21	53.71	.....	0.05	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE WOODBRIDGE POULTRY EXHIBITION.

THAT the show just concluded has been by far the most successful of any held by this Society admits of no question, for, independently of the decided superiority of the birds exhibited as a whole in classes, or individually, the entries themselves show an addition of fifty pens beyond the aggregate of last year. This favourable result is entirely attributable to the harmonious manner in which every member of the Woodbridge Committee personally interests himself in the success of the undertaking, even as though the results were altogether attributable to his individual exertions alone. By the kindness of Major Long the Abbey Grounds have been always placed at the service of the Society, and these grounds contain specimens of the horse-chestnut of a growth but rarely met with, one especially (now in full blossom) being fully 40 yards in diameter, and of equal height—a tree which appeared to excite the admiration of every visitor. To those sightseers, also, who last week paid Woodbridge a visit, a stroll to the Seckford Almshouses situate within a stone's throw of the Poultry Show failed not to be most interesting, as being one of the most commodious and extensive range of buildings in the kingdom devoted to a charitable purpose. The whole have been erected without any restriction as to outlay, and the accommodation throughout admits not of improvement. To the aged poor, perhaps, a greater boon could not have been afforded, for not only is a happy home in their declining years placed within reach, but a small and exceedingly well-fitted church is provided for their accommodation. It is replete with every convenience, and daily services are regularly conducted, the galleries only being open to the public generally. In walking, through the graveyard attached the ages of those entered spoke strongly that such a charity was no mean acquisition to any locality, and tended to longevity. The two eldest inscriptions were each ninety-one, the youngest sixty-two, whilst the ordinary age would be about eighty-four. An additional interest was given to the scene by the fact that the usual pairs of Nightingales would here annually

and by the kindness of our guide, we were introduced to a nest containing several young ones, to which the mother bird was so anxiously devoted that she actually continued her maternal duties (although three faces were gazing upon her for several minutes, within the distance of only a couple of feet), without the slightest emotion or concern whatever, nor did the male bird sing with less energy on account of our intrusion. It is evident that known security gives these birds such confidence, and thus adds a peculiar charm to the whole neighbourhood. Many of the plants are of exceeding beauty, and the grounds of the charity are particularly well kept.

But to return to the show-field. The poultry were exhibited under two extensive tents, and the arrangement of the pens was very good. Game fowls headed the prize-schedule, Mr. Fletcher, of Stoneclough, near Manchester, taking both cups, the one with a splendid pen of Black Reds, the second cup with a pen of Red Piles. The competition was capital, and the difficulty of winning, of course, proportionate. Dorkings were generally good, but undoubtedly open to much improvement in respect to condition. The Cochins were one of the principal features of the show, and here Captain Heaton, of Manchester, took both the principal premiums with birds of great merit, a group of light Silver Cinnamons taking the cup, and his well-known Buffs the second place. Besides these, there were exhibited such White and Partridge-coloured Cochins as could easily have secured prizes, had classes been allotted to them respectively. The *Spaniard* class was a very good one, and the class for Dark *Brahmas* one of the best we have seen for years. The Light *Brahmas* class was not nearly so good. The *Hamburgh* classes were not equal to those met with in the northern counties of England, but much better than those of the Woodbridge Show in previous years. The Extra Variety class was one of the best in the show, and embraced all the most popular and unique breeds. Game *Bantams* mustered strongly and of good quality.

The *Aylesbury Ducks* and *Geese* were unusually good, and but for the mishap of death to a Duck during transit, for it had been evidently dead for hours, all the prizes would have gone to Mr. Fowler, of Aylesbury.

The "Emu fowls" in the selling class were a decided rarity, and drew much public attention.

The Turkeys were superior specimens, and the Pigeons were most deserving.

The competition was throughout greatly in advance of last year, in fact, as may be seen by the appended prize-list, exhibitors at Woodbridge sent birds from places as distant as Manchester, Darlington and even Dublin. With so much public support, a couple of energetic bands, and weather the most favourable that could be imagined, we cannot but congratulate the committee on the increasing success of their show, nor do we doubt but that a slightly improved prize-schedule (as now contemplated) will bring still "more grist to the mill" on future occasions.

GAME (Black-breasted and other Reds).—Cup, J. Fletcher, Stoneyclough. Second and Third, S. Matthews, Stowmarket, Suffolk. Commended, Captain T. Wetherall, Loddington, Northamptonshire.

GAME (White and Piles, Blacks and Brassy-winged).—Cup, J. Fletcher, Stoneyclough. Second, Rev. F. Watson, Kelvedon. Third, J. J. Hassell, Great Bromley, Essex. Commended, S. Matthews, Stowmarket, Suffolk.

GAME (Duckwing and other Greys and Blues).—First and Third, S. Matthews, Stowmarket. Second, E. Goodwyn, Woodbridge.

DORKINGS Coloured or White).—First, J. Frost, Parham, Suffolk. Second, J. K. Fowler, Aylesbury. Third, H. Lingwood, Needham Market, Suffolk. Highly Commended, W. Syon, Debach, Suffolk.

COCHIN-CHINA (Any variety).—Cup and Second, Captain Heston, Lower Broughton, Manchester. Third, F. W. Ross, Hastings, Buff. Highly Commended, F. W. Zerkow, Donnybrook, Dublin. White; H. Lingwood, Needham Market, Buff. Commended, J. K. Fowler, Aylesbury.

SPANISH.—Cup, Captain Heston, Lower Broughton, Manchester. Second, F. Crook, Forest Hill. Third, E. Wright, Holloway Road. Highly Commended, J. K. Fowler, Aylesbury. Commended, Mrs. Pattison, Malden, Essex; J. H. Cuff, Castle Market, London.

BRAHMA POOTRA (Dark).—Cup, H. Lacy, Hebdon Bridge, Yorkshire. Second, W. L. Barclay, Leyton, London. Highly Commended, J. Hinton, Hinton, near Bath; W. Hargreaves, Bacup, near Manchester. Commended, R. W. Allen, Woodbridge; R. H. Boyle, Dublin; J. K. Fowler, Aylesbury.

BRAHMA POOTRA (Light).—First, J. Pares, Chertsey. Second, F. Crook, Forest Hill. Highly Commended, J. Pares. Commended, W. Syon, Debach, Suffolk.

HAMPTON (Golden-splashed).—First, A. K. Wood, Kendal. Second, Rev. T. L. Fellowes, Aisle, Norfolk.

HAMPTON (Golden-pencilled).—First, H. Crossley, Broomfield, Halifax. Second, W. P. Webb, Stowmarket, Suffolk.

HAMPTON (Silver-splashed).—First, Rev. T. L. Fellowes, Aisle, Norfolk. Second, W. L. Barclay, Leyton, London. Highly Commended, A. K. Wood, Kendal.

HAMPTON (Silver-pencilled).—First, T. J. Saltmarsh, Chelmsford, Essex. Second, Rev. T. L. Fellowes.

ANY VARIETY.—First, E. Pagen, Lympstone (La Fèche). Second, J. Pares, Chertsey. Third, J. R. Pease, Darlington (Siskies). Highly Commended, J. Hinton, Hinton, near Bath (Malays); F. Edgington, Leiston, Suffolk (Normandy); H. Tate, Leeds; J. R. Morley, Woodbridge (Pheasant Malays). Commended, E. P. Kirk, Ipswich (Grève Coeur); J. Gilbert, Ipswich (Grève Coeur).

BANTAMS Game).—First, G. Manning, Springfield, Essex. Second, J. Wiggins, Woodbridge, Suffolk. Highly Commended, E. Goodwyn, Woodbridge. Commended, G. Manning.

BANTAMS Any variety).—First, G. Manning, Springfield, Essex (Gold-laced Sebright). Second, J. Calvingford, Woodbridge (Sebright). Commended, Miss M. Newson, Tunstall, Suffolk.

SELLING CLASS.—First, J. Wright, Woodbridge (Emu). Second, E. Pettit, Colchester Game. Third, Rev. F. Watson, Kelvedon (Brown-breasted Red Game). Highly Commended, R. W. Allen, Woodbridge (Game Partridge, Brown Red). Commended, S. Alexander, Woodbridge (White Duck); G. Manning (Brown-breasted Red Game Bantams); W. G. Bannister, Woodbridge (Silver Polands).

GAME COCK.—Prize, E. Pettit, Colchester. Commended, S. Matthew, Stoneyclough.

DORKING COCK.—Prize, W. G. Bannister, Woodbridge. Commended, J. Frost, Parham, Suffolk.

BIST COCK Any variety).—Prize, J. Pares, Chertsey (Light Brahma). Commended, J. Wright, Woodbridge.

BANTAM COCK.—Prize, G. Manning, Springfield, Essex (Black-breasted Red). Highly Commended, J. K. Fowler, Aylesbury. Commended, J. Frost, Parham, Suffolk.

SWISSFOWL.—Game.—Prize and Extra Prize, S. Matthew. Dorking.—Prize, O. E. Crosswell.

DUCK.—White Aylesbury.—First, J. K. Fowler, Aylesbury. Second, J. F. Wigg, Woodbridge. Brown.—First, J. K. Fowler. Second, J. F. Wigg.

GRESE.—First, J. K. Fowler. Second, W. L. Barclay (Toucan).

TURKEY.—First, F. R. Pease, Darlington. Second, J. K. Fowler. Extra, B. Garrett, Saxmundham, Suffolk.

FOWLS Any variety).—First and Second, E. E. M. Boyd, Ashby-de-la-Zouch (Carriers and Owls). Highly Commended, J. W. Pountney, Woodbridge (Carriers); Rev. F. Watson, Kelvedon (Blue Owl); E. E. M. Boyd, Ashby-de-la-Zouch (Carriers); B. Garrett, Saxmundham; E. Brown, Sheffield; H. Bunce, Brunswick Road, Walsworth (Almond Tumblers). Commended, J. W. Pountney, Woodbridge.

EXTRA.—Highly Commended, J. Canham, Sutton, Suffolk (Himalayan Bantam).

Mr. Edward Hewitt, of Eden Cottage, Sparkbrook, near Birmingham, officiated as the Arbitrator.

HENS EATING EGGS.—Hens may be cured of eating their eggs, by blowing out the contents of an egg, and filling it with mustard, made into a paste. Make a hole in each end

and then blow the contents out, and when filled paste paper over the hole. One taste of the mustard effects a cure.—(Rural American.)

QUADRUPEDAL CHICKENS.

It may be interesting and amusing to the readers of "our Journal" to know that I possess a chicken, more than a week old, having four legs. It is in perfect health, eats and sleeps well, and can stand comfortably on two of its legs, but when it attempts to walk is apparently at a loss to find use for more than two legs, and the other two impeding its movements, the chick is quite a fixture.

Although I have bred and been amongst fowls for several years I never saw a similar freak of nature in poultry. It is a matter of great doubt whether a double-yolked egg ever produces two chickens, or even one. I have tried several, but they always turned out addled at the expiration of the twenty-one days. Is it possible that the chicken in question is the produce of a double-yolked egg, placed in the nest unobserved when the hen was sat?

I am told by a poultry-breeder of some years standing that he once had a chicken with two legs of its own and two duck's legs, and a duck's tail in addition. This enormity did not live long, probably from being unable to make up its mind as to whether it was a duckling or a chicken. My quadruped is doing well, and I hope to amuse the poultry-loving public by its production at one of our summer shows.—CHANTICLER.

ARTIFICIAL SWARMS.

So many inquiries reach me regarding the best mode of making artificial swarms, that it is pretty evident that the advantages of this process are beginning to be generally appreciated, and that bee-keepers are more and more unwilling to submit to the anxiety and uncertainty, to say nothing of that hope deferred which maketh the heart sick, so frequently attendant upon natural swarming.

Those bee-keepers who have not advanced beyond the use of ordinary straw hives, or boxes destitute of either bars or frames, cannot do better than follow the instructions given by me in No. 161 of the new series of "our Journal," by the adoption of which artificial swarming may be effected with ease and certainty. It may, however, be remembered that "PHILACTUS," in answer to whose inquiry these instructions were given, objected that the removed hive might suffer too great a shock from the desertion of the whole, or nearly the whole, of its adult population, and that my friend Mr. S. Bevan Fox, whilst fully approving of the plan recommended by me, admitted that in the course of his practice instances of this character had occurred. I have, therefore, recently adopted the plan of confining the bees of the removed hive until after dark in the evening of the day on which the operation is effected, and find that this precaution effectually mitigates the evil complained of. As free ventilation during their imprisonment is absolutely essential, the best mode of confining the bees is by tying the hive up in a piece of cheese-cloth and suspending it in a cool dark cellar. As bees are extremely impatient of confinement at this season, it is best to place the hive in its new position and give them their liberty the same evening, merely deferring it until it is too dark for any to take wing.

Those more advanced apianians who have adopted moveable-comb hives, and are desirous either of propagating Ligurians or rapidly multiplying their stocks, will find it very advantageous to make use of what have been styled "nucleus boxes," and start a number of "nuclei," or small artificial swarms, in them. These nucleus boxes should be of such a size as to accommodate four combs on the bars or frames in ordinary use in the apiary, and should be fitted with floor and crown-boards. It will be found advisable to screw the latter to the box, whilst for the convenience of frequent examination the crown-boards may be loosely laid on without fastening of any kind. A "duchess" slate, 12 inches by 24 inches, forms a cheap and effective protection from rain and sun, whilst its weight keeps the crown-board close and prevents its being readily dislodged by high winds.

In order to stock a nucleus box a strong stock in a bar or

frame-hive should be looked over until the queen be discovered on one of the combs. This being carefully set aside and remaining undisturbed, one of the other combs is selected containing brood in all stages from the egg to the sealed nymph, and this with the adhering bees must be placed in the nucleus box into which the bees from two other combs of the same hive should be brushed with a feather, and a spare comb having been placed on either side of the brood-comb the whole must be shut up, and (ventilation having been duly cared for), conveyed to a dark and cool place until after sunset, when it should be put in its place in the apiary, and the bees set at liberty.

If the object be to Ligurianise an apiary the vacancy in the parent stock should be filled up with a brood-comb from a black colony, and if this can be done, the abstraction of bees will (as stated in reply to my esteemed correspondent "W. L."), scarcely be missed, and may be repeated almost *ad infinitum* about every other day; but every comb of black brood should be marked with the day of the month on which it is inserted, and not employed for breeding Ligurian queens until say twelve days afterwards. If brood-combs are unattainable, or the object be not to multiply Ligurians, the place of the one abstracted should be occupied by an empty worker-comb, which will be rapidly filled with eggs; but if no worker-comb be attainable the remaining combs must be brought together and the vacancy left on one side.

Towards the afternoon of the day following, the newly-formed nucleus should be examined, with the view of ascertaining whether it possesses sufficient bees to raise a queen and hatch the brood. At least both sides of the brood-comb should be well covered with bees, and if such is not the case, another comb must be lifted out of the parent hive, and the absence of the queen having been insured by first ascertaining her presence on a different comb, the adhering bees should be brushed into the nucleus. Most of the adult bees will speedily desert the new for their old habitation, but enough young ones that have never taken wing must perforce remain to constitute an important, and probably a sufficient, addition to the population of the juvenile colony. Royal cells will soon be started, and on the ninth or tenth day all but two of these may be removed to assist in forming other nuclei, which will thereby gain a great advantage in point of time. They should be cut out with a triangular bit of comb attached (apex downwards), and inserted in a similarly-shaped hole cut in another brood-comb, whilst the greatest care should be taken to avoid bruising or chilling the royal embryos.

Fourteen days from the formation of the nucleus is the average time occupied in rearing a queen, whose first business is to destroy such of her royal sisters as are yet in embryo, and fourteen days more generally elapse before she begins egg-laying. These periods vary, of course, with the state of the weather and other circumstances, and I have even known a queen hatched so late as the twentieth day, but that which I have stated is the time usually occupied. If all go well, the population will by this time have considerably increased by the hatching out of all the brood, and as soon as eggs are laid another ripe brood-comb should be added. In a few days a fresh accession of numbers will take place from this source, when the colony may be shifted into a hive of the ordinary size, when by the judicious addition of another brood-comb or two and a few empty combs, aided by the breeding powers of the juvenile matron, it may be rapidly built up into a strong stock.

By repeating this operation as often as the number of hives in the apiary will admit without unduly weakening the stocks themselves, and taking care at the same time to utilise all superfluous royal cells, a more rapid rate of increase may be attained than by any other method known to—A DEVONSHIRE BEE-KEEPER.

RESULTS OF STORIFYING.

YOUR esteemed correspondent Mr. Bevan Fox seems to have misunderstood my communication in No. 200 of your Journal, detailing my apiarian proceedings last summer; as he appears to have the impression that the storified hives yielded an average of 35 lbs. each, and also furnished me with swarms. It will be seen, on reference to the article referred to, that out of six stocks kept through the winter

three were managed upon the storifying system, and three devoted to the formation of swarms. Two of the storified hives sent out swarms, which were, however, promptly returned, and royal cells excised to prevent a second issue. These hives therefore were practically prevented from swarming. The third hive did not attempt to swarm.

The three together yielded over 100 lbs. of very pure honey in supers, but the stock hives were left in a very impoverished condition and required liberal feeding to enable them to stand the winter.

All the prime swarms from the three hives devoted to swarming did very well, and from two of the stocks second swarms were also artificially raised. The prime swarms in every case sent out maiden swarms, which were returned after the royal cells had been excised. All the prime swarms and the parent hives were very heavy in the autumn, and required no feeding; although in the autumn 10 lbs. of fine honey was abstracted from one of the stocks, and nearly as much from one of the swarms. From another of the swarms I removed more than 10 lbs. of honey in the spring, still leaving the bees an ample supply for their own consumption. The swarms and stocks from which they issued (with one exception), proved much more populous in the spring than the stocks which had been storified.—J. E. B., Wolverhampton.

EARTH CLOSETS.

THAT the public owe a debt of gratitude to the Rev. H. Moule cannot be disputed, and, therefore, it may seem ungracious to say anything in disparagement of his patented earth closets; but having had one in use for some time, truth compels me to state, that although well supplied with earth, both fine and dry, the machinery has often refused to act. On one occasion a small piece of wood had got among the earth. On other occasions no cause was known. It appears to me that if the earth were simply poured out from a jug, and the closet constructed without any machinery whatever, the result would be more satisfactory, and the construction cheaper. My only regret is, that this suggestion may lessen the pecuniary advantages, which may fairly be considered due to Mr. Moule for his valuable discovery.—G. S.

THE BEE AS A PHYSICIAN.—In Marktstett, Lower Franconia, Bavaria, in the autumn of 1864, a bee is declared to have become an M.D.! Its owner, who was deaf, was stung by it in the eye-lid near the temple. He applied earth and water to the wound without effect, but at last fell sound asleep. When he awoke the church clock struck. He listened with surprise and counted the strokes. All right! The clock struck, and the bee-sting had given him back his hearing, which he had lost two years previously from the effects of a severe cold.—(*Regensburg Gazette*.)

OUR LETTER BOX.

FOWLS DISORDERED (*An Amateur*).—Loss of appetite and dark combs are not sufficient particulars to enable us to recommend a remedy, for they may be caused by over-feeding, or organic disease. Give each a tablespoonful of castor oil, abundance of green food, and no hard corn. They are probably too fat.

ADDRESS (*John Cowburn*).—If you enclose to us a letter, in a stamped envelope, we will direct and forward it to "A Benfrewshire Bee-keeper."

FOUL BROOD (*W. T. Lanarkshire*).—The piece of comb appears to be infected with virulent foul brood. If the stock be populous, the mode of cure recommended by Mr. Woodbury, in No. 123 of our *New Series*, might be tried. If weak we should kill the bees, and make the most we could of the contents of the hive, keeping the whole out of the reach of other bees.

DRONE KILLING (*A Lady Bee-keeper*).—The recent unfavourable weather is the cause of the premature expulsion of drones in one of your hives.

PLACING A NATURAL SWARM IN A STEWARTON-HIVE (*H.*).—A natural swarm may be hived at once in the stock-box. The intervention of a common hive is only necessary in the case of a forced swarm, and that merely because it is more convenient to drive bees from an ordinary hive into one of the same form, rather than into an octagonal box.

EARLY EXPULSION OF DRONES (*A. S. A., Stamford*).—The untimely destruction of drones and drone-brood is owing to unfavourable weather, and indicates that all preparations for swarming are abandoned for the present. The return of fine weather may induce the bees to renew these preparations, but the probability is, that the issue of a swarm will be much delayed, if not altogether prevented, by the check which has been given to the prosperity of the colony.

SMALL DRONES (*M. S., Brixton*).—Some of the bees accompanying your letter are ordinary workers, whilst others resemble small drones bred in worker cells, but they reached us in too mutilated a condition to admit of a positive decision. The recent unfavourable weather is the cause of drones being expelled from the non-supersed straw-hive.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MAY 30—JUNE 5, 1865.	Average Temperature near London.			Rain in last 35 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.								
30	Tu	Toadgrass flowers.	68.0	45.2	56.6	16	52 af 3	2 af 8	48 9	49 11	6	m. 45	160
31	W	Figwort flowers.	69.1	45.1	57.1	14	51 3	3 4	51 10	morning	7	2 36	151
1	Th	Bogbean flowers.	68.2	44.1	56.1	13	51 3	5 8	55 11	13 0	7	2 28	152
2	F	Elder flowers.	68.4	45.0	56.7	16	50 3	6 8	59 0	37 0	9	2 18	153
3	S	Eye Grass flowers.	69.0	44.4	56.7	17	49 3	7 8	3 2	53 0	10	2 9	154
4	Sun	WHIT SUNDAY.	69.1	44.8	57.0	14	48 3	8 8	4 3	21 1	11	1 59	155
5	M	WHIT MONDAY.	70.6	47.0	58.8	22	47 3	9 8	8 4	45 1	12	1 49	156

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 69.9°, and its night temperature 45.1°. The greatest heat was 85° on the 3rd, 1846; and the lowest cold, 32°, on the 31st, 1857. The greatest fall of rain was 0.91 inch.

PROPAGATION OF THE FIG.



IG trees are raised from seed, and propagated by grafting, budding, layering, suckers, cuttings, and eyes. From seed there is a faint chance of new sorts, but the fruit, from its very nature, seems to be scarcely susceptible of improvement by cross-breeding. The seed should be taken from the pulp when the fruit is fully ripe, washed, dried, put away in paper until spring, when it may be sown in sandy loam, just covering the seeds, and plunging in a hotbed of 75°. When the seedlings are sufficiently large to handle pot-off singly in 32-sized pots, and keep them in a vinery until autumn, shifting them, however, into 24-sized pots in June, and keeping them well watered during the summer. In future seasons they should be kept pot-bound, and closely stopped to five joints, or if there be room on the garden walls they may be planted on the south aspect only, and they will grow like Willows. It is a pity to take up much space with

them, for they will not produce fruit in less than three years if grown in pots in a vinery; and I never could induce them to ripen fruit on walls in less than six, though very closely stopped and root-pruned. The readiest way of inducing them to fruit is to insert eyes, as in budding Roses, in an old tree on the trellis at the back of a vinery, in the July of the same season as that in which they are raised. In this way they will occasionally fruit in the second year, but more generally in the third. Cuttings may likewise be taken and grafted on an old plant just when it begins to grow, the scions being dormant or their vegetation not so forward as that of the stock. Where there is no old plant on which to graft or bud, I have worked on year-old trees from eyes, discarding the seedlings when the grafts or buds had taken. It is astonishing what an influence the stock has on the graft or bud, either soon arriving at a fruiting state. I have raised Figs from seed, but have only had two worth their room, and one I have discarded, having another which I consider an acquisition, it being a White Ischia in part and in part a Brown Turkey. One remove further and it will be a White Ischia with the charac-

teristics of the Brown Turkey. Beyond the desirability of obtaining new kinds there is no advantage in raising from seed.

By grafting and budding, an old-established tree may be given a new head in a short time. Tongue-grafting is the best mode when the shoots of the stock are little thicker than the graft; cleft and crown-grafting are better when the branches of the stock are thick. Beyond changing an undesirable for a better variety without losing time there is no advantage in grafting and budding, for every shoot will make a cutting, and every bud a plant; half a dozen plants may be obtained from buds to one from grafting, and instead of one plant from a cutting half a dozen may be had from eyes.

Fig trees may also be raised from suckers, but these are not so good as layers, for suckers receive a great check when detached, and are apt to throw up suckers after they become plants. They should be taken off in autumn with roots attached, and either potted or planted at once in the places where they are to remain, or planted a foot apart by a south wall to gain strength, cutting them down to three eyes in the spring if they are to be trained to a wall or trellis, and not stopping them if standards are desired.

For layering select the shortest-jointed wood; avoid that which is long-jointed. The operation is best done in pots, bending the shoot over the pot, pegging it down in the centre, and fastening the point of the shoot to an upright stake. An incision is not necessary, though one may be made at the upper side of the shoot, and immediately below a joint. With a knife remove all the eyes that would be buried in the soil, and rub out all others up to 9 inches or 1 foot for dwarf standards, stopping or pinching out the leader three joints above the disbudded part, leaving five, however, if the wood is short-jointed. If the plant is intended for a trellis or wall, leave three joints or cut down to that, and if for a standard of any height, disbud to the required height, not stopping the leader until from three to five joints above the required height. In pegging the shoot down into the soil be careful not to break it, and the same careful attention is needed in tying the shoot upright. If the weather is dry and the operation performed out of doors, water copiously. The soil should, of course, be kept moist under glass. If layering is done in spring the layers will be well rooted by autumn, and should then be detached, potted if intended to be grown in that way, and wintered in a cool house or shed; or if required for planting against walls or trellises this may be done at once.

Cuttings a foot long, taken off with a little heel of the old wood, may be potted singly in 32-sized pots with the heel close on the drainage, and then headed down so as to leave but one or two joints above the soil, picking out the eyes at the base of the cutting so far as it is inserted in the soil. Such cuttings placed in a hotbed and duly watered will grow, and when rooted may be removed to a vinery. The best time to put them in is spring, just before they begin to grow, though they may be taken at

any time after the leaves fall, and be kept with the ends in soil until wanted for grafts, cuttings, or eyes. The plants from cuttings may be planted out of doors in July, previously hardening them off a little; or they may be planted under glass or kept in pots, shifting them in July into 24's, and again, when the leaves change, into eight-inch pots for fruiting another season in pots in unheated houses, or for forcing.

The best system of propagation is by eyes. These are made in precisely the same manner as Vine eyes, and are inserted upright in 48-sized pots in sandy loam, and with the upper end of the eye buried half an inch in the soil. They should be placed with the eye in the same position as when it was attached to the plant. If laid flat the shoot will not come erect from the eye, but take an oblique direction, and an undesirable twist or turn is thus given, if a straight stem is wished. If the pots are watered and placed in a mild bottom heat of from 75° to 85°, a top heat of 60° or 65° from fire heat, and the soil kept moist, the shoots will soon appear and roots will quickly form. Keep the soil moist, and besides maintaining a moist atmosphere sprinkle them overhead twice daily, morning and evening. When the plants are well rooted remove them to a vinery or any house with a little artificial heat, which is necessary to obtain plants quickly of a size for bearing, but any house will do, though the plants will not be so soon fit for producing fruit, and they should have the warmest part of cool houses. They may also be planted out against south walls in June after hardening them.

If dwarf trees are wanted, with the finger and thumb pinch out the point immediately above the fifth leaf, and side shoots will be emitted; disbud to three on the uppermost, leaving one on each side and a leader. When these have made five leaves pinch out the ends, and we have three shoots on each, all the rest being rubbed off, and we have the foundation of a tree to be trained fan-fashion. If a tree on a stem 9 inches or 1 foot high is the object in view leave the leader alone and disbud all shoots that come along the stem, and if a standard with a longer stem be desired disbud all the side shoots up to the required height, and pinch out the leader three joints above the part disbudded. If fruit show rub it off at once, and when the shoots come, whether it be the same year as the plant is propagated or afterwards, and they have a tendency to grow erect, tie them down to make horizontal growth and a good-shaped head, stopping them at the fifth leaf. Disbud the shoots where they come too close together, stopping them again when they have made five joints or leaves, but do not stop the midsummer shoots, and only the first shoots should be stopped.

In the above manner dwarf and standard Fig trees for walls and trellises can be had in a short time for growing in cool houses (these not artificially heated), for walls, and for forcing, and a few hints on their culture will shortly be given.—G. ARDEY.

NAMING RHODODENDRONS.

VARIOUS articles have appeared in this Journal as to the soil and culture desirable for the Rhododendron, but I have for a long time expected to see in your columns some remarks on another part of the subject—the nomenclature of a plant that has risen, and justly so, into such high repute. The Rose has long and properly been styled the Queen of Flowers, the Rhododendron is with as much justice entitled to be styled the King of Flowering Shrubs. The increase of new varieties is now very considerable, from the number of persons who have turned their attention to the subject of hybridising, and the facility with which seedlings are raised. We have yearly accessions of new sorts to the numbers already under cultivation, and should matters go on as at present, in regard to nomenclature, we must shortly get into great confusion unless the names of the raisers be given with the adopted name of the variety.

What has led me to notice this is that I have had experience of what is heretofore. I cultivate upwards of 200 choice named varieties, and in making my collection I purchased from a respectable nurseryman a plant of Prince Albert, and a duplicate of what should have been the same from another equally respectable party but they are totally different

sorts. From another vendor I obtained a plant of Leviathan; this I expected to be a fine white, tinged rose, but it turns out to be a plain red. In both cases I complained, but by both parties whom I blamed for sending me what was not the variety wanted, I was told there were two varieties of that name, and I believe both the sellers might be perfectly honest. As an instance, three or four years ago I exhibited at the Roxburghshire Society's Show, in April, a seedling which had a first-class certificate and was that day named *Mirabilis*. In May succeeding one of the Bagshot nurserymen, I think it was Mr. Standish, exhibited a seedling at one of the London shows, and named it *Mirabilis*. This I only knew by reading the report of the show. I did not, of course, alter the name I had given, but added Deane's to it, which would prevent any one purchasing from thinking he was having what was not the variety intended in both cases.

What I should think is now absolutely necessary is, that all new sorts should have the raiser's name succeeding the name of the variety, as in the case of Dahlias, Hollyhocks, Carnations, &c. Nurserymen in printing their catalogues should aim at this, and give the raiser's name or the person sending the varieties out, so far as known, but I have seen no attempt at this, except in one instance, that of Mr. Veitch, of Chelsea, in advertising the seedlings raised by his late father.

I raise thousands of hybrids and have a few good varieties amongst them, but I should feel annoyed at sending them out with names which, unknown to me, were adopted by others. Give the raiser's name, and then the public know what they buy, and raisers are free of all blame for what they sell, if these suggestions are acted on. It is only what the public are entitled to.—W. DEANS, Jedburgh, N.B.

ROYAL HORTICULTURAL SOCIETY.

IN accordance with the Minute of Council of the 16th May, 1865, the Fruit and Floral Committees met the Council on Monday, May 22nd, when the following resolutions were unanimously carried—viz.,

Proposed by Dr. Hogg, seconded by Mr. Moore, and unanimously carried:

"That in future, for the year 1866, Special and Great Shows, at present held on Saturdays, shall be held on some other day of the week."

Proposed by Mr. Lee, seconded by Mr. Wm. Paul, and unanimously carried:

"That this Meeting recommend that the Fruit and Floral Committees on Tuesdays, should meet at 11 o'clock, and the plants be removed not earlier than 5 o'clock P.M., and that exhibitors are earnestly requested to send all objects for exhibition before half-past 10 o'clock, A.M."

VINE CULTURE—STOPPING THE SHOOTS.

I HAVE a Vine spur-pruned showing fruit on nearly every shoot. Should these shoots be stopped, leaving one joint between the bunch and where nipped off? and when the laterals break at the bottom of the leafstalks after the above stopping, should they be taken clean off, or should I allow one joint, a leaf, &c., to remain? If the Vine is very vigorous, and say four years old, and bears on every shoot, will it be likely, when cut back on the spur-pruning system next season, to produce fruit again on each shoot?—A. B.

[As the question you have asked is one of great importance to many amateurs just at this time, I shall enter more fully into details than I otherwise would have done. In doing so I shall describe the operation of stopping or pinching the Vine, and add a few instructions for its management afterwards, in a plain and intelligible manner, so that those not acquainted with the management of the Vine may be able to cultivate it successfully with pleasure and profit.]

In the first place, I shall suppose your Vines to have arrived at that stage of growth when they would require stopping. The proper time to do this is when the shoot has made three joints above the bunch, then pinch out the uppermost joint, leaving two joints between the top of the shoot and the bunch. The reason of my advocating leaving the shoot till it has made three joints above the fruit joint

is, because the young leaf on the second joint is very frequently injured if the point of the shoot is pinched out as soon as the second joint is made; but if left a few hours longer the point of the shoot can be pinched out without doing any injury to the leaf on the second joint. The two first leaves that are formed above the fruit joint must not on any pretence whatever suffer any injury by mutilation or otherwise, as they are the main lungs through which the Vine receives its atmospheric food, which is immediately conveyed to the bunch. In a few days after the first stopping, the shoots will throw out laterals or side shoots, these should be stopped at the first joint. By this time the Grapes, if all go on well, will be in flower. If the weather is favourable give all the air you can to disperse the pollen. If it is too cold to give air you must create a current artificially; the best mode of doing this is to use a thin piece of board about 2 feet long, and a foot or 18 inches wide, and by waving this to and fro the pollen is easily scattered about. In giving air always avoid direct currents, unless the air outside is very mild, and the wind not too high. Always open your front and back lights alternately. If they are opened opposite each other a sharp current of air passes through the house, which often rusts the young Grapes, and gives them a severe check, from which they do not soon recover; in fact, this often disfigures them for the season.

Thinning the Fruit.—This is a delicate operation, and should be performed with great care. In the first place see that your scissors are sharp at the point. Secondly. Be careful not to rub the berries with the scissors, the points of which should not be wider apart than is necessary for taking hold of the fruit-stalk. Commence the operation of thinning as soon as the fruit is fairly set; the berries that ought to be cut out are every day impoverishing those that should remain. In thinning the bunch endeavour to carry in your mind's eye the size the berries will be when ripe, and thin accordingly. Leave the berries all over the bunch regularly distributed, so that the bunch when ripe will be filled out, having no open spaces, but every berry in its proper place. With a little practice and proper attention this may be done at the first thinning; in fact, there ought to be but one thinning. After the operation of thinning is finished, and the young Grapes are about the size of Peas, all the lateral shoots that are made above and below the fruit joint should be pinched out, so that the whole force of the Vine may be directed towards the fruit. The Vines should not be syringed after the bunches are formed. Proper directions for this will be given in some future paper on pruning and starting the Vine into growth. The syringe must only be used for sprinkling the floors and stems. After the Vine has set its fruit, the next operation will be

Shouldering the Bunches.—This is done by fastening small strips of matting to the shoulders of the bunches, and drawing them slightly away from the main part of the bunch, and fastening the other end of the strip of matting to the trellis or any convenient spur of the Vine, this allows the air to circulate freely through the bunch, and if this operation is performed judiciously, the shape of the bunch will be improved, it also acts as a support, especially when the bunch is large. From the time of thinning the Grapes till they begin to form their stones or seeds, the temperature of the house should never be lower than 60° by night, and from 70° to 75° by day. If the temperature rise to 80° or 90° with the sun, it will do no harm, providing there be plenty of air on at the time. Shut the house up about 2 or 3 P.M. in bright weather, earlier if it is dull and cold. Pay great attention to giving air, and shutting it off; for instance, if the sky become cloudy suddenly, partly shut up the house, and if the sun come out again soon afterwards open the lights as soon as possible. Fine Grapes cannot be grown unless proper attention is paid to this particular and most essential part of the work connected with Grape-growing.—J. WILLS.]

(To be continued.)

VEGETABLE VARIATIONS.

"T. G. H." sent you, a short time since, an extract from the "Naturalist," on a "curious effect of grafting," which has since been illustrated by "E. S." A very curious case in point came under my notice last summer.

In the garden of a friend in the neighbourhood of Bath, are two Laburnum trees, the pink variety, with short full racemes. In both of these trees were sundry branches of pure yellow blossoms, and all over the trees were bunches of blossom containing one long yellow raceme in the midst of short pink racemes, and vice versa.

But the strangest fact remains. High up amongst the branches were tufts of quite a different Broom-like plant with pink blossoms. They were too high for me to ascertain the genus and species to which they belonged, but they appeared of a more prickly character than any Broom with which I am acquainted.

The trees were old ones, and my friends were unable to throw any light on the manner in which they had been grafted or budded, it having been done by a former inhabitant; but for the ten years they resided in the house the characteristics of these trees have been constant.—ELLA.

ROYAL BOTANIC SOCIETY'S SHOW.

MAY 24TH.

THE first great Show was held on Wednesday last, and well did it sustain the high reputation which the Regent's Park Exhibitions have long maintained for that freshness and brilliancy which nowhere else exist in an equal degree. Indeed, it may safely be said that for extent and general effect it has never been surpassed by any show at the same season. Not only were the stove and greenhouse plants most worthily represented, but there were gorgeous Orchids, gigantic Azaleas, Roses such as have been rarely equalled, and wonderful Pelargoniums, whilst the lofty Palm and the lowly Fern helped to swell the train.

STOVE AND GREENHOUSE PLANTS.—Many good collections were shown, but the plants were nearly of the same kinds as those which have appeared at our exhibitions for the last three or four years, and this constant repetition becomes wearisome. It is high time that other species should be added to the somewhat limited list of those at present grown for exhibition purposes. In collections of sixteen Mr. Peed again showed his fine *Allamanda grandiflora*, a large *Erica depressa*, a fine bushy plant of *Ixora Griffithi*, a fine *Chorozeema*, and two good *Pimeleas*. From Mr. Whitebread came *Allamandas*, *Aphelaxes*, *Azaleas*, *Heaths*, the showy scarlet *Clerodendron splendens*, *Rondeletia speciosa*, and a good *Stephanotis*; and from Messrs. Lee a fine *Acrophyllum venosum*, a large bushy *Eriod depressa*, *Ixora coccinea*, a fine *Stephanotis*, and *Aphelaxis macrantha purpurea*, very bright in colour. Mr. Barendse sent a *Hoya Paxtoni*, a pretty plant, but from the drooping habit of the flowers it does not show to advantage unless the pot be tilted. *Clerodendron Thomsoni* and *Rhynchospermum jasmoides* were also shown in the same collection; but of the former by far the finest specimen in the show was that from Mr. Fraser, though it was not fully out, being in this respect surpassed by one from Mr. A. Ingram, in which the scarlet corolla formed a beautiful contrast with the snowy white calyx. A magnificent plant of *Prostanthera lasiantha*, measuring some 5 feet high by as much in diameter, was also shown by Mr. Fraser, as well as good plants of *Adenandra fragrans* and *Erica Bergiana*. A fine bushy *Rhynchospermum* was also shown by Mr. Ingram, and in other collections we remarked several good *Aphelaxes*, *Allamandas*, *Heaths*, *Combretum purpureum*, and *Chorozeemas*. In mixed collections of flowering and ornamental-foliaged plants Messrs. Lee again exhibited their fine *Alocasia metallica*, a noble plant of *Cibotium princeps*, *Theophrasta imperialis*, and *Cordylone indivisa*, very fine, and the variegated *Ananassa sativa* which, bearing a fair-sized Pine Apple with a variegated crown and several offsets from the base of the fruit, had a remarkable appearance; Mr. Williams's collection comprised *Azaleas*, *Heaths*, *Crotons*, *Colocasia albobolicea*, the stalks of the broad foliage having a violet tinge with yellowish variegation; the pretty purple and white *Statice profusa*, and a beautiful plant of *Gleichenia semivestita*. From Messrs. A. Henderson came a fine plant of *Medinilla magnifica*, a basket of the showy red and black *Clanthus Dampieri*, *Vincas*, a large *Caladium*, and fine plants of *Crotons*, *Rhopala De Jonghi*, and *Alocasia macrorrhiza variegata*, the leaves largely splashed with white.

Prizes.—For sixteen: first, Mr. Peed, gardener to Mrs. Tredwell, Norwood; second, Mr. Whitebread, gardener to H. Collyer, Esq., Dartford; third, Mr. Kalle, gardener to Earl Lovelace. For ten (nurserymen): first, Messrs. Lee; second, Mr. Fraser; third, Mr. Rhodes; fourth, Mr. Baxendine. For ten (amateurs): first, Mr. Chilman, gardener to Mrs. Smith, Epsom; second, Mr. Page, gardener to W. Leaf, Esq., Streatham; third, Mr. A. Ingram, gardener to J. J. Blandy, Esq., Reading; fourth, Mr. Carson, gardener to W. R. G. Farmer, Esq., Cheam; fifth, Mr. G. Wheeler, gardener to Sir F. Goldsmidt, Bart., Regent's Park. For six: first, Mr. Kemp, gardener to Earl Percy, Albury Park; second, Mr. J. Wheeler, gardener to J. Phillpot, Esq., Stamford Hill; third, Mr. C. Smith, gardener to A. Anderson, Esq., Lower Norwood; fourth, Mr. Young, gardener to H. Stone, Esq., Leigh Park. For fifteen fine-foliaged and flowering plants: first, Messrs. Lee; second, Mr. Williams.

ORCHIDS constituted one of the grand features of the Show, a magnificent bank of these flowers filling nearly the whole of one side of the great tent. It would be almost an endless task to enumerate the species of which the numerous collections were composed. Foremost among the collections of twenty were Mr. Baker and Mr. Bullen. The former had good *Phalænopses*, including *Schilleriana* with eighteen fine flowers, *Saccolabiums retusum* and *curvifolium*, the latter with ten spikes; a pan of *Cypripedium barbatum* superbum some 3 feet across, *C. villosum* with half a dozen blooms, fine *Vandas*, *Trichopilia crispa* very fine, *Lælia purpurata*, *Cattleya Mossiae*, *Dendrobium nobile* and *Lindleyanum*, and *Sobralia macrantha splendens*. Mr. Bullen had a splendid *Dendrobium densiflorum* upwards of 3 feet across, bearing numerous beautiful spikes of its orange bloom, by far the finest specimen in the Show; *Cypripedium Hookera*, *C. barbatum* superbum with some forty blooms, *Saccolabium guttatum* with eight spikes, *Vandas*, *Calanthe veratrifolia*, *Cattleyas*, &c. Mr. Page sent, among others, *Cypripedium Stonei*, the well-known *Dendrobium nobile*, and the large white-and-orange-flowered *D. formosum giganteum*. In the other classes Mr. Penny sent *Trichopilia crispa* very fine, *Cypripedium caudatum* with three flowers, the charming *Odontoglossum phalænopsis*, and good *Saccolabiums*; and from other exhibitors came *Cattleya Acklandiae*, *Chysis Limminghi*, *Cyrtopodium punctatum*, good *Dendrobiums*, *Oncidiums*, and *Saccolabiums*, *Cattleya Mossiae*, from Mr. Wilson, with large flowers, very fine in colour; and the new *Phalænopsis Lüddemanniana* from Mr. Wilson and Mr. Robson—that of the latter with four good-sized blooms.

Prizes.—For twenty: first, Mr. Baker, gardener to A. Bassett, Esq., Stamford Hill; second, Mr. Bullen, gardener to A. Turner, Esq., Leicester; third, Mr. Page; fourth, Mr. Peed. For twelve: first, Mr. Penny, gardener to H. Gibbs, Esq., Regent's Park; second, Mr. Wilson, gardener to W. Marshall, Esq.; third, Mr. Young, Leigh Park; fourth, Mr. A. Ingram. For six (nurserymen): first, Messrs. Jackson, Kingston. For six (amateurs): first, Mr. Wiggins, gardener to W. Beck, Esq., Isleworth; second, Mr. Wheeler, gardener to J. Phillpot, Esq.; third, Mr. Chilman; fourth, Mr. Robson, gardener to G. Cooper, Esq.

HEATHS.—Among these were nice specimens of the showy scarlet *Westphalingia*, *ventricosa magnifica* and *ventricosa coccinea minor*, *elegans*, *tortulæflora*, *tricolor flammea*, *Albertus*, buff, *Sindryana*, *denticulata moschata*, remarkable for the flowers coming mostly in fours united at the base, *Victoria*, *eximia superba*, the pretty blush white *perpicua nana*, and many others.

Prizes.—For ten: first, Mr. Rhodes; second, Messrs. Jackson; third, Mr. Baxendine. For eight: first, Mr. Peed; second, Mr. Page. For six: first, Mr. Chilman; second, Mr. Wheeler, gardener to J. Phillpot, Esq.; third, Mr. C. Smith, Norwood, and Mr. A. Ingram; Extra, Mr. Wheeler, gardener to Sir F. Goldsmidt, Bart., and Messrs. F. & A. Smith.

AZALEAS were not so closely trained in as last year, when they had too much the appearance of monster crinolines, and the flowers being relieved by a little foliage, and not too much, the effect was altogether more pleasing. Mr. Veitch's magnificent plants put all other competitors in the shade in the class for eight. They were from 6 to 7 feet high, some were 7 feet in diameter at the base, and the whole were profusely set with bloom. The kinds were *Gledstanesi*, *Cri-*

terion, *Rosea superba*, *Trotteriana*, *Chelsoni*, very fine, *Variegata*, Mrs. Fry, and *Extrani*. In the class for six Mr. Turner was first with plants which, though not on the whole so large as those of Mr. Veitch, were nevertheless extraordinary specimens of cultivation. They were *Barclayana*, *Coronata*, *Arborea purpurea*, *Gem*, *Illustris Nova*, and *Juliana*. Good collections were also shown by Mr. Fraser, Messrs. Lane, and others. Among the new kinds those which were finest were *Louise von Baden*, large pure white and apparently free-flowering, *President*, rosy salmon, large, and very fine in form and substance, *Kinghorni*, rosy lilac, also of fine form and great substance, and *Mars*, orange red. The above were shown by Mr. Turner.

Prizes.—For eight (nurserymen): first, Mr. Veitch; second, Mr. Fraser; third, Mr. Rhodes. For eight (amateurs): first, Mr. Carson; second, Mr. J. Wheeler; third, Mr. Page; fourth, Mr. Whitebread. For six (nurserymen): first, Mr. Turner; second, Mr. Veitch; third, Messrs. Lane; fourth Mr. Fraser and Mr. Williams. For six (amateurs): first, Mr. Penny; second, Mr. Todman; third, Mr. A. Ingram; fourth, Mr. Kalle; fifth, Mr. Chilman. Prizes were also awarded to Mr. Turner for his new *Azaleas*, and to Messrs. Lane for their collection.

Roses were shown in splendid condition, especially Messrs. Lane's and Mr. W. Paul's, those from the former were very full of bloom and the flowers distributed all round the plant. *Madame Villermoz*, *Paul Perras*, and *Souvenir d'un Ami* were very fine, and among the others we remarked *Niphetos*, *Chénédolé*, *Victor Verdier*, and *Charles Lawson*. In Mr. W. Paul's collection, *Souvenir d'un Ami*, *Madame Villermoz*, and *Senateur Vaisse* were also remarkably fine. Good collections also came from Messrs. Paul & Son and Mr. Turner, those of the latter being in eight-inch pots. Among them was a plant of *Alba rosea* with beautiful white blooms 5 inches across; and *President*, likewise fine. Numerous boxes of cut blooms were shown by Mr. W. Paul, Messrs. Paul & Son, and Messrs. Lane.

Prizes.—For ten: first, Messrs. Lane; second, Mr. W. Paul; third, Messrs. Paul & Son; fourth, Mr. Francis. For six: first, Mr. Terry.

PELARGONIUMS from Mr. Bailey of Shardeloes threw all others, fine though these were, into the shade. They were marvellous examples of what can be effected by skilful cultivation, being from 4 to 5 feet across, and a mass of bloom. The judges considered that the first prize was not a sufficient reward for such superior cultivation, and gave a medium gold medal of the value of £10. The finest were *Spotted Gem*, *Lord Clyde*, *Sanspareil*, *Etna*, and *Lady Canning*, the others being *Guillaume Severyns*, *Rose Celeste*, *Ariel*, *The Belle*, and *Sir Colin Campbell*. In the nurserymen's class for twelve Mr. Turner had finely-bloomed plants of *Lady Canning*, *Guillaume Severyns*, *Fairest of the Fair*, *Desdemona*, *Lord Clyde*, *Prince of Prussia*, *Garibaldi*, *Brambrandt*, *Pizarro*, *Fair Rosamond*, and *Butterfly*. In Fancies he was first with *Lady Craven*, *Ellen Beck*, *Undine*, *Modestum*, *Delicatum*, and *Roi des Fantaisies*. Very good plants also came from Messrs. Fraser, Bailey, and Wiggins. Some seedlings were also shown, the best of which were *Charles Turner*, from Mr. Hoyle, noticed last week, *Lady of Quality*, also from the same raiser, a crimson with a white eye and dark top; *Elegans*, from Mr. Nye, a pretty crimson with a conspicuous white eye; and *Clytie*, a light pink and rose Fancy from Mr. Turner, to all of which first-class certificates were awarded.

Prizes.—For twelve: first, Mr. Turner; second, Mr. Fraser. For ten: first, Mr. Bailey; second, Mr. Wiggins. For six, Fancies (nurserymen): first, Mr. Turner; second, Mr. Fraser. For four (amateurs): first, Mr. Bailey; second, Mr. Weir.

NEW PLANTS, &c.—Among the novelties from Mr. Veitch were *Maranta Veitchii*, with beautifully marked foliage, *Bertolonia pubescens*, also with very ornamental foliage, *Dieffenbachia grandis*, the leafstalks marked with dark green, *Retinospora obtusa nana aurea* and *Anthurium cordifolium*, which have been noticed on previous occasions, and *Peperomia maculosa*, for all of which first-class certificates were awarded; and second-class ones for the following—viz., *Peperomia acuminata*, the leaves deep green with a silvery stripe up the middle, a new *Peruvian Adiantum*, *Schismatoglottis* sp., and *Odontoglossum cordatum*, which have been

good in previous reports. Among other plants from the same firm were *Leptopteris superba*, one of the most beautiful of Ferns, with dense translucid and extremely graceful fronds, a fine pan of *Anthurium Scherzerianum*, remarkable for its curiously-formed spathe and spadix and brilliant colour, and *Dieffenbachia Baraquiniana*, having the footstalks and midribs of the leaves ivory white. Messrs. Ivery again exhibited the new Ferns, shown at the Crystal Palace. First-class certificates were given to all but *Scopolopendrium fissum-latum*, which had a second-class, a similar award being made for *Asplenium adiantum-nigrum microdon*. Mr. Bull likewise exhibited new plants, a most extensive collection, but most of them have been seen before at Floral Committee meetings from time to time. First-class certificates were given for *Ficus Porteana*, the variegated *Aubrietia purpurea*, *Spheroogyne cinnamomea*, the beautiful *Bertolonia margaritacea*, *Athyrium f. f. Vernoniae*, *Retinospora leptoclada*, the new red-bracted *Bougainvillea*, *Cupania undulata*, *Asplenium myriophyllum*, *Maranta Van den Hecke*, and *Calonyction sanguineum*, for several of the new *Aucubas*, and for *Woodsia polystichoides Veitchii*. Besides these he sent several plants, such as *Amorphophallus zebelinus*, the variegated *Sedum azoides* and *Privet*, &c. Messrs. Jackson, of Kingston, exhibited *Columnea erythrocha* with scarlet flowers 3 inches long, and a variety of *Clerodendron Thomsonae* with larger flowers; and Mr. Thompson, Ipswich, *Aquilegia coerulea*, all of which had certificates of the first class.

Among miscellaneous objects were a group of hardy Ferns from Messrs. Ivery, Palms from Mr. Bull, *Calceolarias* of a good strain both in large and small pots from Mr. James of Isleworth, Pansies, and a wreath of *Bougainvillea* from Mr. Fleming of Cliveden, covered with its beautiful rosy bracts, the peculiarity of which was that it had been grown without bottom heat. The Castle Kennedy Fig was exhibited by Mr. Fowler, the gardener at that place; two dishes of Strawberries by Mr. Carmichael, gardener to H.R.H. the Prince of Wales at Sandringham; and a basket of excellent *Granadillas* by Messrs. Mart, of Oxford Street.

The American plants of Mr. John Waterer added an additional attraction to the Show, and in a few days the Rhododendron valley will present a gorgeous spectacle. As it was, it constituted a show of itself, and one of no small merit.

ROYAL HORTICULTURAL SOCIETY.

FLORAL DECORATION FÊTE, MAY 24.

THE array of titled dames and other notabilities, the fact of its being the Queen's birthday, and the amount of prizes offered, were all insufficient to produce anything but a most wretched display; and sorely did I grudge the two hours that it took me to reach Kensington from the Regent's Park, make my notes, and return. My own inclination would lead me to say nothing about it, for folks will hardly credit what a miserable failure it was. The Show, if such it can be called, was held in a corner of one arcade, which was more than enough to receive all the subjects for competition. There were decorations for churches, a few bouquets, a few wreaths, and some flower-stands for tables of artificial and natural flowers. With regard to the first of these, I must own I do not see why the Royal Horticultural Society is to assume that all its members approve of the system of church decorations. There are many persons who think that this wants checking rather than encouraging, and it seems to be not quite correct to throw the influence of a large Society into one side of the question. However, let that pass, for I do not think the decorations exhibited would be likely to induce any one to wander in that direction. There was a motto, "Alleluia! The Lord is risen! Alleluia!" formed of yellow Everlastings on a brown ground, which obtained the first prize for Miss Sutherland; a cross with Lilies of the Valley, and a motto entwined round it; then there was another cross formed of *Narcissus* with green background. A third prize was awarded to a double triangle, an ornament intended for Trinity Sunday; one was decorated with Cornflowers, the second with red *Pelargoniums*. Such were the church decorations. Then Mr. Lucking exhibited some pretty bouquets, nearly equal to what one may see in Covent Garden any day. They were, of course, pretty; and the

bridal one, formed mainly of Orange flowers, double Primulas, Lilies of the Valley interspersed with Maiden-hair, was doubly good. There were two or three wreaths with the motto, "God Save the Queen," the taste of which was not, I hope, a test of the loyalty of the makers, for they were very confused and ugly. A group of rice-paper flowers arranged in one of Miss March's stands for the dinner-table, exhibited by Miss Austin, Hector Villa, Wilmoat Road, Dalston, was very pretty indeed, but did not come within the terms of the Exhibition. There was another stand of a similar character formed of natural flowers, but not by any means remarkable. There was also a contrivance for lighting a dining-room, of which I can only say it reminded me forcibly of the system of lighting which I remember when a boy some of us adopted in a magnificent display of private theatricals, which we held in the coach-loft to the admiring gaze of a dozen of our schoolfellows. We cannot find fault with the Society for endeavouring to create a better taste in these matters; but I think all will feel that after the failures of last year and this, it will be better to try some other plan of "evolving it out of the depth of our æsthetic consciousness."—D., Deal.

MESSRS. WATERER & GODFREY'S AMERICAN SHOW is now in full perfection, and the immense tent in which it is held, covering an area of 350 feet long by 150 feet wide, and containing several hundreds of Rhododendrons and Azaleas, presents a glorious spectacle, for though many of the plants suffered considerably from the severe frost of the 30th of April, they are nevertheless in excellent bloom. In the centre, which is sunk considerably below the sides, is a gravelled walk at least 30 feet wide, with several circular and oblong beds containing specimen plants, and on each side of this central walk are banks of Rhododendrons edged with turf; then walks, 8 feet wide and other beds on a higher level, and finally a walk surrounding and overlooking the whole, with Conifers intermixed with Rhododendrons next the walls of the tent. The following are the best of the different colours:—Purple: Nero, Currieana, Ne Plus Ultra, and Sir Isaac Newton. Crimson: *Atrosanguineum*, *Blandyanum*, *Brayanum*, Mrs. W. Bovill, *Archimedes*, Charles Bayley, and Vandyke. Rose: Sir Charles Napier, *Roseum pictum*, *Elfrida*, *Giganteum*, *Titian*. Crimson-edged: *Alarm*, *Bylsianum*, and *Concessum*. Lilac: *Everestianum* and *Fastuosum flore pleno*. White: Mrs. John Clutton, very fine and of beautiful form; and *Purity*, which, though not equal to the former, is cheaper. Of new kinds, *Stella* is a pale rose with a dark blotch in the upper petal, and a great improvement on Lady Eleanor Cathcart, having larger flowers; Lady Clermont is a fine salmon with dark spots; and Charles Dickens and H. H. Hunnewell are beautiful additions to the bright crimson class, the latter in particular having a very large truss. Alexander Dancer, with large rosy crimson flowers with a slight magenta tinge, is also a fine variety.

FLOWER SHOW AT THE CRYSTAL PALACE.

FLORISTS' FLOWERS.

THE excision of cut flowers from the schedule, a step taken in order to enable the Company to throw more weight into the more showy and important classes, had the effect of considerably diminishing the number of florists' flowers at the Great Show; for with the exception of a box of Roses, two of Pansies and Tulips, respectively from Messrs. Paul and Son, Downie, Laird, & Laing, and Mr. Ayres and Mr. Turner, there were none to be seen in a cut state. The value of the two former collections, beautiful as they were, was considerably diminished by their not having any names attached. I have never seen cleaner or more beautiful Tulips than were in the stand of Mr. Turner, their shape, texture, and size being all that could be desired. The Pansies were also exceedingly clean and well grown; but there was nothing very striking amongst the Roses, a few blooms of *Teas* being, however, as they always are, pleasing.

In *Pelargoniums* in eight-inch pots the two principal exhibitors were Mr. Fraser, of Lee Bridge, and Mr. Charles Turner, of Slough, who were placed first and second. Those sent in by amateurs were very inferior; so much so that in

one class the second and third prizes, and in another the first and second, were withheld from want of merit. Mr. Fraser's twelve Pelargoniums in eight-inch pots comprised *Rose Celestial*, *Etna*, *Fairest of the Fair*, *Leviathan*, *Sylph*, *Roseum*, *Lurline*, *Osiris*, *Sir Colin Campbell*, *Lilacina*. Mr. Turner's contained *Lilacina*, *Lady Canning*, *Leviathan*, *Desdemona*, *Fairest of the Fair*, *Candidate*, *Guillaume Severyns*, *Rose Celestial*, *Bertie*, *Ariel*, *Royal Albert*, and *Celeste*. These were all fine specimens of cultivation, but there was a freshness about Mr. Fraser's which placed him in the position that he occupied. In Fancies the run was very close; and although Mr. Fraser's did win, it was only by a neck, the overbloomed state of *Roi des Fantaisies* in Mr. Turner's lot being the point, I fancy, that told against him. I wonder that this variety is grown for exhibition, for notwithstanding the brilliancy of its colours, it is so flimsy that it can never be depended upon, and is so soon shattered by a journey. Mr. Fraser's six were *Queen of the Valley*, *Roi des Fantaisies*, *Delicatum*, *Celestial*, *Arabella Goddard*, and *Cloth of Silver*. Mr. Turner's were *Lady Craven*, *Evening Star*, *Roi des Fantaisies*, *Celestial*, *Ellen Beck*, and *Delicatum*. Both collections were models of fine growth, and it would be difficult to imagine how they could be surpassed. Of seedling Pelargoniums there were not many exhibited, but one or two were of great excellence. *Charles Turner* (Hoyle), is a fine, beautifully shaped, orange scarlet flower, and must in the eye of the raiser be considered first-rate, or he would never have named it after Mr. Turner. It was awarded a first-class certificate, as was *Marion*, a large soft rose with clear white throat. *Elegans*, a fine, clear, painted flower, received a second-class certificate.

Roses in pots were exhibited in fine condition, and deservedly attracted great attention. The first prize for twelve in 13-inch pots was awarded to a very fine collection from Mr. Wm. Paul, containing *Souvenir d'Elise Vardon*, very fine; *Louise Odier*, good; *Baronne Prevost*, poor; *Madame Villermoz*, very fine; *Souvenir d'un Ami*, a splendid plant; *Senateur Vaisse*, good; *Paul Perras*, *Comtesse de Barban-tanne*, *Madame de St. Joseph*, very fine; and *Catherine Guillot*, beautiful. Messrs. Paul & Son and Messrs. Lane were placed equal second, one collection being not quite out, and the other a little overblown. The former contained *Madame Julie Daran*, excellent; *Jules Margottin*, *Comte Boubart*, *Niphetos*, *Charles Lawson*, excellent; *Paul Ricaut*, *Coupe d'Hébé*, *Souvenir d'un Ami*, and *Madame de St. Joseph*, very fine. Messrs. Lane's were—*Catherine Guillot*, *Souvenir d'un Ami*, *Anna de Diesbach*, *Coupe d'Hébé*, *Victor Verdier*, *Gloire de Dijon*, *Charles Lawson*, *Moiret*, *Paul Perras*, and *Souvenir de la Reine de l'Angleterre*. The collections of twelve Roses in eight-inch pots were greatly admired, and deservedly so, for they were admirably grown, and are of a size more pleasing to the general run of fanciers than the larger plants. Mr. Turner was placed first with a beautiful set, in good condition, clean and fresh. They were *Madame Villermoz*, *Catherine Guillot*, *Senateur Vaisse*, *Celine Forestier*, *Victor Verdier*, *Charles Lawson*, *Le Rhone*, a splendid flower, *Gloire de Dijon*, *Souvenir d'un Ami*, *Baronne Adolphe de Rothschild*, and *Juno*. Messrs. Paul & Son were second, and had *Maréchal Vaillant*, good, *John Hopper*, *Victor Verdier*, *Madame Rivers*, *Senateur Vaisse*, *Charles Lawson*, *President*, *Catherine Guillot*, &c.

A more successful exhibition was never held at the Crystal Palace, and, as usual, the greatest courtesy and attention was shown to all engaged in it. The crowds of people that thronged the parts where the Roses, Geraniums, &c., were staged showed how popular these flowers are; and one could not help feeling how well deserved were the encomiums which were passed, not only on the plants, but upon the Company, who so liberally and promptly fell into the wishes of the exhibitors, and on Mr. Wilkinson, who with so much urbanity and attention carried out the arrangements for the Show.—D., Deal.

MR. SALTER'S PYRETHRUMS.

VERSAILLES NURSERY, HAMMERSMITH.

No time should be lost by all admirers of hardy herbaceous plants, in visiting Mr. Salter's garden. The magnificent collection of both single and double Pyrethrums

is now in perfection. It would be difficult to do justice to their beauty by any attempt at description, they must be seen to be appreciated, and no one will feel disappointed who will take the trouble to inspect them. The vivid colour of rosy red and carmine are very attractive, both in the single and double varieties. As a decorative border plant, we have nothing at this time of the year to equal them; used as border plants in front of a shrubbery they will be very effective. In a short time the herbaceous *Pæonies* will be in perfection. These exquisite hardy plants are but little known, or they would be highly appreciated. Those who are beginning to tire (if not already weary) of beds of yellow and scarlet, would do well to inspect Mr. Salter's general and extensive collection of hardy herbaceous plants. The collection of *Zonale Pelargoniums* in this establishment is very first rate. There are several seedlings of 1864, which will take a prominent position in this deservedly popular class of flowers; but if for no other purpose let no lover of useful decorative hardy plants lose any time in paying his or her respects to the *Pyrethrums*.—X.

THE BEARING-POINTS OF PEACH AND NECTARINE TREES.

It is generally supposed that when standard Peach and Nectarine trees are planted in the border under glass the fruit will be borne chiefly by that part of the tree nearest to the glass, but after many years' experience I have proved the reverse to be rather the case. I have eight of these trees planted out, and I think there is even more fruit where the branches commence from the stock than in any other part of the tree, and all the trees are loaded with fruit, with the exception of two, which I had ordered to be dug up, as they are of a sort which does not answer under glass. For the same reason the shoots grow out immediately above the stock where the graft is, so that the trees can always be kept in shape. Some of these stocks are now 10 inches round, and I have one Nectarine of which the branches extend 10 feet in diameter. It is quite loaded with fruit, some of which last year sold in Covent Garden at 18s. the dozen.—CONSTANT READER.

REPORT ON THE BEDDING PELARGONIUMS GROWN AT CHISWICK, 1864.

By THOMAS MOORE, F.L.S., SECRETARY TO THE FLORAL COMMITTEE.

THE most approved sorts are indicated throughout by three asterisks (***), and the next grade by two (**). The varieties which are not distinguished by any mark are to be regarded either as unnecessary, from their similarity or inferiority to other kinds, or from their absolute worthlessness.

SERIES I.—PLAIN-LEAVED VARIETIES.

1. FLOWERS SCARLET.

Achilles ** (Presented by Mr. Bull).—Vigorous habit; flowers large and of fine shape, in fair-sized trusses, scarlet, lighter and brighter than *Punch*. This was formerly called *Vivid*, but the name has been since altered to avoid confusion, there being already a fine scarlet variety bearing this latter name.

Brilliance (Bull).—Vigorous habit; flowers in immense trusses, large, and of a bright scarlet, but not distinct enough from *Punch*.

Doris (Bull).—Vigorous habit; flowers large, light scarlet. Too thin as a pot plant.

Eleanor *** (Bull).—Dwarf, free habit; flowers large, scarlet, of good quality. As a pot-plant, under glass it proved also dwarfish and free, with bright scarlet flowers in large trusses, for which it was adjudged three marks.

Envoy (Bull).—Vigorous habit; large scarlet flowers in large trusses, but not considered superior to *Punch*.

Faust *** (Bull).—Vigorous habit; flowers very bright scarlet, large, and of first-rate shape, borne in large trusses. It proved also a very showy plant when grown under glass, producing immense heads of flower.

Garibaldi (Downie & Co.).—Vigorous habit; flowers scarlet, of good quality; much in the style of *Punch*, and too much like it to be also required.

Whitway (Taylor).—Dwarf habit; leaves smooth; flowers orange scarlet, of loose shape.

Red Cowper (Francis).—Dwarf and compact; flowers at scarlet, white in the eye. Too near to Waltham Pet.

Lady Rokeby *** (Bull).—Moderately vigorous habit; flowers light scarlet, in fair trusses. This proved good as a pot plant, but not so good as a bedder.

Le Zouave (Van Houtte).—Vigorous habit; flowers large, very bright scarlet, but not sufficiently numerous in the truss.

Little David (Low & Co.).—Very similar to Little Major, and, like it, suitable for small beds, or for edgings.

Little Major *** (Turner).—Dwarf habit; flowers light scarlet. This variety maintained its previous character as a good dwarf bedder.

Major Domo (Bull).—Moderately vigorous; flowers light scarlet. A fine bold plant for pot culture.

Mars (Turner).—Dwarf, moderately vigorous habit; leaves distinctly lobed; flowers of good form, very bright orange scarlet.

Palastro (Salter).—Dwarfish habit; leaves lobed; flowers dull orange scarlet.

Punch *** (Fraser, Turner).—Vigorous habit; flowers large in bold ample trusses, bright scarlet, and very showy. The best of the large-growing plain-leaved scarlets in the whole collection.

Red Dragon (W. Paul).—Vigorous habit; leaves faintly green-zoned; flowers very rich deep scarlet in compact trusses, and of good form. The deepest coloured scarlet in the whole collection.

Rigby's Queen (Fraser).—Vigorous habit; leaves hairy; flowers large, loose, light scarlet. Not adapted for beds.

Royal Dwarf (Turner).—Moderately dwarf habit; flowers scarlet, free, but not equal to Trentham Scarlet.

Royalty (Bull).—Vigorous habit; bright scarlet flowers.

Royalty (Williams).—Moderately vigorous; flowers bright scarlet.

Stella (Dixon).—Dwarf habit; flowers of a deep rich scarlet, as in Red Dragon, but not effective.

Trentham Scarlet *** (Fraser).—Moderately dwarf; flowers bright scarlet, in good trusses, free. One of the best of the dwarf-growing scarlets for bedding purposes.

Waltham Pet *** (W. Paul).—Very dwarf compact habit; flowers light scarlet, of good shape, with a small white eye. A good dwarf bedder.

2. FLOWERS CERISE OR ROSEY SCARLET.

Beauté de Meloise (Fraser).—Very similar to Lady Middleton, and too near to be required.

Lady Middleton *** (Taylor).—Moderately vigorous; flowers in large trusses, of good size and form, bright cerise. Also called Trentham Rose and Shrubland Rose.

Lord John Russell (Rollisson).—Dwarf habit; flowers deep rosy scarlet; distinct in colour.

Viceroy (Bull).—Vigorous habit; flowers large, rosy scarlet.

Visitor ** (Bull).—Moderately vigorous; flowers rosy scarlet, of fine shape and of large size. It was of indifferent quality as grown in pots.

3. FLOWERS ROSE PINK.

Christine *** (Kinghorn).—Moderately vigorous habit; flowers rose pink, freely produced, and of good form. Both this and Rose Queen hold their place in the first rank of bedding varieties.

Primer (Bull).—Moderately vigorous habit; flowers bright rosy pink with white base.

Roseum Compactum (Salter).—Moderately vigorous habit; flowers in compact trusses, small, rose throughout.

Rose Queen *** (Kinghorn).—Moderately vigorous habit; flowers rose pink, with the base of the upper petals paler, freely produced, and of good form.

SERIES II.—ZONATE VARIETIES.

1. FLOWERS SCARLET.

Admiration (Williams).—Moderately vigorous; leaves dark zoned; flowers bright scarlet.

Adonis *** (Hally).—Dwarf, free bold habit; leaves with a dark submarginal zone; flowers large, well formed, in fair trusses, light scarlet, with a white eye.

Agatha (Rollisson).—Moderately vigorous habit; leaves

dark zoned; flowers small, well formed, light scarlet, in abundant compact trusses; free and showy.

Amiral Protet *** (Van Houtte).—Moderately vigorous in habit; leaves with an indistinct zone; flowers large, deep scarlet, of fine shape, and produced in bold effective trusses. It proved a very showy pot plant, under which circumstances only it was grown, and it is to this condition that the marks of merit are intended to apply.

Attraction *** (Turner).—Moderately vigorous; leaves with an indistinct green zone; flowers abundant, bright scarlet, in fine trusses, of good form and moderate size. Also called Scarlet Perfection, Sutton's Perfection, Old Perfection, Boule de Feu, and Montfordi.

Baron Ricasoli (E. G. Henderson & Son).—Moderately vigorous habit; leaves with sharply defined dark zone; flowers in fair-sized trusses, dull crimson scarlet.

Beauty (Bull).—Moderately vigorous; leaves with broad dark zone; flowers large, scarlet.

Cheshire Hero ** (Wills).—Moderately vigorous habit; leaves with an indistinct zone; flowers soft, light scarlet, with a cerise tint, free.

Climax (Bull).—Moderately vigorous; leaves with an indistinct zone; flowers bright scarlet. Indifferent under glass.

Clipper *** (Bull).—Moderately vigorous habit; leaves with broad dark zone; flowers bright scarlet, large and of fine shape, produced in good trusses. Equally good as a pot plant under glass.

Comet (J. F. Chater).—Dwarfish habit; leaves with dark centre or zone; flowers scarlet.

Commissioner ** (Bull).—Vigorous habit; leaves with broad dull-coloured zone; flowers in compact trusses, well formed, of a bright orange scarlet; a fine variety.

Cornelius Hegel (E. G. Henderson & Son).—Dwarf habit; very broadly dark-zoned leaves; flowers light scarlet.

Cottage Maid ** (Scott).—Vigorous habit; leaves dark zoned; flowers abundant, in compact trusses, light scarlet, small and well formed. A free showy sort; the same as New Globe, or too closely resembling it.

Editor (Bull).—Vigorous habit; indistinctly zonate leaves; large bright scarlet flowers.

Emperor of the French ** (Turner).—Vigorous dwarfish habit; leaves large, very distinctly zoned in a vandyked pattern; flowers large, in bold trusses, light scarlet.

Etandard (Salter).—Dwarfish free habit; leaves with an indistinct and unequal broad zone; flowers deep scarlet.

Firefly (G. Smith).—Dwarf habit; leaves dark zoned; flowers abundant, bright scarlet.

Fozhunter (J. F. Chater).—A small weak plant; leaves marked with a narrow dark zone; flowers scarlet.

Gaiety (Hally).—Moderately vigorous habit; leaves darkly zoned; flowers light, bright scarlet, with a pale eye.

Garibaldi *** (W. North).—Very dwarf close habit; leaves small, flat, with a broadish well-defined dark zone near the edge; flowers bright scarlet, of good shape, in compact trusses. A beautiful plant for small beds or margins.

Harry Hieover ** (E. G. Henderson & Son).—Dwarf habit; darkly-zoned leaves; loose orange scarlet flowers. It was considered rather desirable as a dwarf variety for edging flower-beds.

Hibberd's Pet (Carter & Co.).—Of moderately vigorous habit; leaves dark zoned; flowers light scarlet but not effective, the trusses being small and the flowers loose. It was also of indifferent quality under glass.

Lilliput (Turner).—Dwarf; leaves darkly zoned; flowers scarlet, in small trusses.

Lucien Tisserand ** (E. G. Henderson & Son).—Moderately vigorous habit; leaves marked with a dull broad zone; flowers showy, large, bright scarlet with a light eye.

Lucius (Bull).—Vigorous habit; dark-zoned leaves; scarlet flowers.

Martin Gireau *** (Rollisson).—Vigorous habit; leaves with broad dull zone; flowers large, in fine trusses, of good form, light scarlet.

Meteor (J. F. Chater).—Moderately vigorous; leaves dark zoned; flowers scarlet.

Neatness (F. & A. Smith).—Dwarfish vigorous habit; leaves with dark vandyked zone; flowers of good form, large, scarlet, in small trusses.

Persian ** (Bull).—Vigorous habit; very dark broad zone; flowers fine, large, and well formed, of a soft carmine-scarlet.

Petit Mont Rouge (E. G. Henderson & Son).—Dwarf habit; leaves with a dark zone; flowers very bright scarlet.

Philomelle Leseine (E. G. Henderson & Son).—Leaves marked with a dull zone; flowers light scarlet.

Princess of Prussia ** (Rev. J. Dix).—Vigorous habit; leaves with an indistinct zone; flowers small, salmony scarlet, in large close trusses. A good pot plant, but not very well developed in this instance.

Queen Mab (Hally).—Dwarf habit; leaves dark zoned; flowers orange scarlet.

Really Good (Bull).—Vigorous; dark-zoned leaves; flowers light scarlet, of fine shape.

Red Jacket (Veitch, Turner).—Vigorous habit; leaves broad with narrow dark vandyked zone; flowers light scarlet. Similar to Emperor of the French, but inferior to it.

Red Riding Hood ** (Hally).—Dwarf habit; leaves dark zoned; flowers very bright scarlet, of fine form.

Reidii (Fraser).—Dwarf vigorous habit; leaves dark zoned; flowers deep scarlet with white eye, in small trusses.

Rev. Joshua Die ** (the Society).—Moderately vigorous compact habit; leaves marked with a dull zone; flow above medium size, of good shape, in compact trusses, of a very bright scarlet. A seedling raised at Chiswick, as both distinct and good.

Senator (Williams).—Vigorous habit; leaves with very dark centre or broad zone; flowers scarlet.

Victor Emmanuel *** (Clarke).—Vigorous habit; leaves with broad dull zone; flowers large, in bold trusses, and of fine quality, very similar to those of Punch. One of the best of the zonate scarlets.

Vivid *** (G. Smith).—Moderately vigorous habit; leaves with broad dull zone; flowers of fine form, in bold trusses, of a bright scarlet. A very fine sort, one of the best as to the shape of the flowers, and equally good as a pot plant.

Volcano *** (Wills).—Moderately vigorous habit; leaves with indistinct green zone; flowers light orange scarlet, large, in bold trusses, and freely developed.—(*Proceedings of the Royal Horticultural Society.*)

(To be continued.)

THE MODERN PEACH-PRUNER.—No. 10.

FORMS OF TREES FOR LONG PRUNING.

ON the question of form there is not so much real difference of opinion as exists as to the most advantageous way of managing the shoots. It is true we can find, especially in the French works, a great variety of shapes indicated as suitable according to circumstances, but many of them are too fantastic to be of any practical use. Examining them is not, however, without profit, for we may generally trace in them some leading principle based on reliable ex-

perience. Thus the student will discover that the chief aim and object steadily adhered to, has generally been to divide, as near to the base of the tree as possible, the main current of the ascending sap into two well-balanced portions. Wherever this leading principle has been departed from, it will be seen that the object then in view was to cover a somewhat lofty wall in the quickest manner, without at the same time sacrificing the claims of the lower branches to be

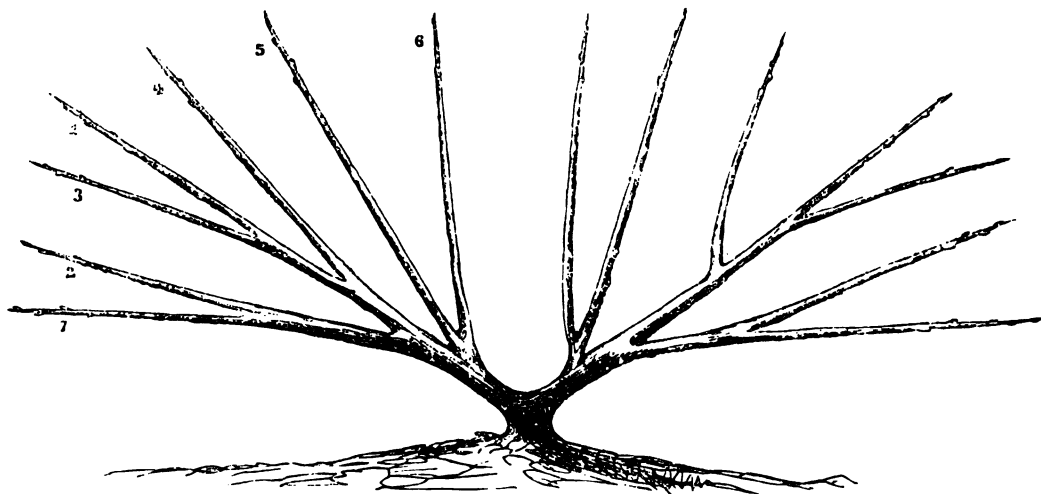


FIG. 9.—The Montreuil Fan.

properly constituted. For this purpose a main central stem has been provided, much less lateral expansion has been allowed, whilst the lowest branches have sometimes been turned upwards at their extremities to favour their development, for that development is always endangered under this form. It is evident that walls of 9 or 10 feet in height, which are by no means the worst suited for many localities, require a shape combining great power of lateral expansion, without sacrificing the harmonious proportions of the whole tree. To accomplish this there is certainly no form which equals the *espalier carré*, of which, as the name indicates, the squareness constitutes the chief advantage.

This form has, therefore, been selected as a model for walls of about 9 or 10 feet in height, where a large tree of any favourite variety was desired. At the same time it cannot be too often repeated that modern gardeners prefer smaller-sized trees and more in number. In this way a succession of crops is best secured, and a greater variety of fruits may be cultivated.

For walls of about 12 feet in height the old Montreuil fan is extremely well adapted. It is a symmetrical shape, easy to establish, and durable. In both of these old and well-known forms it will be seen that the sap has been directed into two main channels from the commencement of the formation of the trees. These channels remain to the last as the main arteries of the whole system. Their position at the most favourable angle, and their early formation cause, as Lepère truly remarks, the sap to acquire "the habit of using them in preference," while their larger proportions secure a mere abundant flow. Kept carefully balanced, by the usual means, during the first five or six years, they continue as the guiding principles of either wing. Their importance and use are aptly explained by their French name, "mother branches," and in each of these forms they are marked 1, in our engravings.

The *espalier carré* and Montreuil fan are neither of them difficult to acquire. Their harmonious proportions are far more pleasing, even when without foliage, than the ordinary

irregular fan shapes. It is surprising that these irregular shapes should still be recommended in works on this subject. The reason given is that the vicissitudes of the English climate require irregular forms, as being those most easily remedied when injured. But it would seldom happen that either of the leading branches in the *espalier carré* could be irretrievably injured, while in the case of the Montreuil fan, it would suffice to lower the branch immediately above the injured portion into the blank space, allowing a new shoot to grow from its upper side to fill up its old place. For these and other reasons these two forms are here selected as models for long pruning. Other forms will occur when close pruning is treated of. Those with a main central stem from which lateral branches are developed yearly, are of obvious formation. In them the lowest branches should be carefully established from the first, as these generally languish in the course of time.

THE OLD MONTREUIL FAN.

In the first year the leading branch (marked 1) of either wing is developed, and carefully balanced by the usual means (described in No. 7, Section 2). Both of these leading branches are shortened to about 12 inches at the first winter pruning, and during the course of the second season of growth the secondary branch (marked 2) of either wing is developed. At the winter pruning the leaders (1) are shortened in again, but considerably less (unless bare), while the secondaries (2) are encouraged to extend more freely. During the third season of growth another secondary (marked 3), and a tertiary (marked 7) in either wing, are simultaneously produced. The winter shortening of all these branches is now still less. During the fourth year all these existing branches are simply maintained in equilibrium,

in order to remedy any defects before proceeding further. In the meantime the shoots on all these branches have been carefully stopped, so as to equalise still more the tree, and to make them fruitful. A little fruit has by this time been taken, but not much. Another object is to allow the tree to gather strength, and to habituate the sap to these channels before proceeding to form the upper portions, which, being more vertical, are more liable to become too strong.

In the ensuing, or fifth season, the two secondaries (4 and 5), of either wing are now developed simultaneously. During the sixth year the whole form is maintained in equilibrium, and the tree has now become productive and vigorous, while the branches require much less shortening. In the seventh season, the tertiary (6), of either wing is developed, which completes this beautiful and simple form. After this nothing is needed but to keep the shoots close and healthy. The weak points are at the angles of insertion of the secondaries, where the shoots are more apt to be crowded than in the *espalier carré*; but this is a defect inevitable in any form partaking of this character, as is seen in the case of Seymour's training and other modes.

THE ESPALIER CARRÉ.

The leading branches (marked 1), of either wing are first developed, and treated as in the case of the Montreuil fan. The second year the first lower secondary (marked 2), of either wing is produced. In the third year the second lower secondary (3), and in the fourth year the third lower secondary (4), of either wing are established. The fifth season is devoted to equalising the whole form. In the fifth, sixth, and seventh years the three upper secondaries are developed, and the upright tertiary (8), of either wing

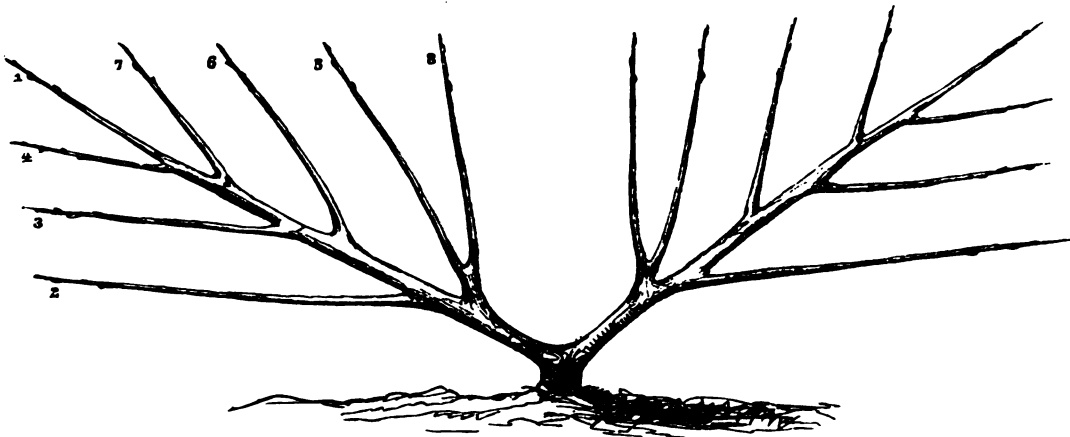


FIG. 10.—The Espalier Carré.

being also laid in, the form is complete. The branches are shortened less at every ensuing winter pruning, and the fruit-shoots carefully stopped from the second year.

The weak points of this fine old form are the rather large interval between the extremities of the secondary branches, amounting to nearly 3 feet. In close pruning, with the shoots more shortened-in, much wall space would be wasted, therefore, the *espalier carré* (unless with a greater number of secondary branches), would not be so suitable. But, on the other hand, the angles made by the insertion of the secondaries on the leading branches are open, and afford much scope for furnishing these difficult portions of the tree. The largest tree at present in the Lepère gardens extends over 40 feet of wall, and one eight years old and just complete, measures 30 feet in width. These are trees of free-growing varieties, such as Grosse Mignonne, &c., and superbly cropped.

Good specimens of waved forms may be seen in England and France. In this case it is proper to divide the tree into two wings, though with a waved central main stem there is little danger of the tree being out of balance. In either of these cases the interval between the branches which are laid in horizontally, should be about 2 feet. In short, excessive

shortening of the branches should be avoided; all vertical lines should be left till the last to be established, and for the first years little fruit should be expected. When once the tree is well formed the branches may be left untouched, and the shoots being carefully attended to, the tree will bear and grow. In irregular fans with central stems, the fruit is comparatively valueless in the lower branches, which languish as the sap is attracted to the upper branches, while the whole centre of the tree is apt to become bare and exposed for the same reason.—T. BRÉHAUT, *Richmond House, Guernsey.*

WIREWORMS.

My garden is infested with wireworms, they have destroyed one row of Peas, and have attacked Scarlet Runners, notwithstanding that I put over the seed a plentiful supply of coal ashes. Last year my Scarlet Runners were nearly destroyed by them, and I barely got my seed back. I have tried various remedies—salt, soot, and lime, but cannot succeed in driving them away. Just to show you what quantities there are, I pulled up a few Turnips that had been dug-in, and had sprouted, and they were eaten into

holes, and the holes were literally swarming with the wireworms.

In a book I have by my side, a paragraph gives a method of extirpating the wireworm—namely, by sowing a crop of White Mustard seed on the field infested by the worm. Will you tell me—First. Whether you think this plan worth trying. Second. The proper time for sowing the Mustard seed. Third. Whether the crop can be made available for any purpose?—WIREWORM.

[Wireworms are so tough-skinned that no amount of salt or lime would kill them, less than a quantity which would destroy vegetation also. Oil is the most fatal of applications to these vermin, and we therefore incline to believe those who state that if seed is covered thickly with Rape dust, which retains some oil, it preserves the seed, and is fatal to any wireworm entering the dust. If Mustard sown in a field extirpates the wireworm, it must be, we think, by being offensive to the beetle (Elater), to which the wireworm eventually is transformed. Those who advocate the use of White Mustard, drill it on the land, and allow no other crop or weed to grow there. The seed of the Mustard, of course, would be saleable.]

DATURA CHLORANTHA CULTURE.

In answer to "PUEB," I shall first observe that this plant has large vine-like foliage, and large, trumpet-shaped, single or double flowers, those of the double variety being in my opinion the better, of a rich yellow colour, and finely scented. It is one of those half-hardy plants that do little good planted out of doors, though a sojourn there for a limited period is of advantage to plants required for late blooming. To do any good planted outside it requires a sheltered border, but though it does very well in some warm situations, yet it has never fallen to my lot to find one warm enough. To produce its flowers satisfactorily, the plant should be placed in heat in spring, vigorous growth induced, well hardened off, and not planted out before the middle of June, and then only in a warm situation.

The seed should be sown in March, in sandy loam and leaf mould, and the pot plunged in a brisk heat of from 70° to 80°. In this it should be continued until the plants are sufficiently large to handle, when they may be potted singly in small pots, and as soon as well established removed to a warm greenhouse or vinery, affording abundance of light by close proximity to the glass, and fresh air, to keep them stiff and short-jointed. If grown in the shade they are spare and dwindling. Pot as the plants fill the pots with roots, using pots a size larger each time until in 9 or 10-inch pots, using at the last potting soil from rotted turves chopped fine two-thirds, and leaf mould one-third, with a free admixture of sharp sand. Keep the plants liberally supplied with water, but never water until the soil appears dry, then give enough, and before the foliage droops. When the trumpets appear liquid manure in a very diluted form may be employed at every alternate watering. Avoid keeping the soil very wet, nor is rich soil good for them whilst young. They are very liable to the attacks of red spider, and should be syringed to keep it in check. Plants raised in spring occasionally bloom well in autumn when grown in a greenhouse. Whilst in bloom they need the same liberal watering as when growing, but after flowering the supply should be diminished, and the plants wintered in a dry part of the greenhouse, giving no more water than enough to prevent the wood shrivelling. I find they flower much finer the second year than the first, and with greater certainty, if well exposed to light and air, and but sparingly supplied with water in the autumn. Thus the wood is ripened, which is an important point. This, of course, can be done very easily by diminishing the supply of water after blooming, even if it be late, and placing near the glass, very little water being given after the leaves fall. They will live in a house from which frost is only just excluded, if the soil is dry, and the wood well ripened; but they are annuals if the soil is kept wet, for the wood not being well ripened shrivels, and they are almost certain to damp off.

In the spring of the second year the shoots may be cut in to three or four eyes, and the plants shifted into pots of less size, adding the ball considerably, potting in sandy loam

with a little well-rotted manure, and providing good drainage. If there is convenience to plunge the pots in a mild hotbed that will be of service, and so, too, is bedewing the shoots night and morning. When the shoots are an inch or so in length the plants should be potted into their blooming pots, those of 12 or 15 inches in diameter are not too large. Use rich turfy, sandy loam, a little leaf mould, and sand if necessary. Drain to one-third the depth of the pots, for abundant and frequent watering will be required. They may be grown on in a warm greenhouse or vinery until June, when they may be transferred to a greenhouse or conservatory to bloom, or they may be hardened off, and the pots plunged in a warm situation out of doors, where they sometimes bloom well. I have put a portion outside, taken them up early in autumn, and found them flower finely in the greenhouse late in the season. They were usually taken in early in September. If allowed to bloom outside they should be removed before frosts occur, and be kept dry in a house secure from frost during the winter. Planted out in the borders of a greenhouse they form fine objects.

To obtain a more continuous and early bloom the seed may be sown in June, the plants potted off singly in small pots, transferred to 4½-inch pots in September, and kept in these through the winter, on shelves in a warm greenhouse, with little water. In spring they are successively potted as the pots become filled with roots until in 9 or 12-inch pots, after which, when well grown, they produce their golden trumpets in profusion. These are close upon 9 inches in length. Slight encouragement in spring when breaking, and making sure of the wood being well ripened in autumn, with a dry soil in winter, are the main points of their culture.—G. ABNEY.

WORK FOR THE WEEK.

KITCHEN GARDEN.

ADVANTAGE should be taken of showery weather to transplant and earth-up all crops that require it; if done when the soil about them is dry, the roots will not receive that benefit from rain which they otherwise would do. In pricking-out or transplanting care should be taken to press the soil close to the roots of the plants, if it is left hollow and loose about them drought will soon stop their growth, or probably cause them to perish. To plant with a trowel is far preferable to planting with a dibber, as, with the latter, the roots are either left in a cavity or are crushed together and rendered nearly useless. The difference between careful and careless planting will soon be perceptible in the plants of the same sowing, if, in the one case the plants are dug up with the greatest care, and are then transplanted and watered; and, in the other, they are pulled up, and deprived of half their roots, and as carelessly planted. *Asparagus*, it is advisable to discontinue cutting from weak beds or those which have been only a year or two in bearing. Keep both old and young beds free from weeds, and thin any other crops that may be growing on them. *Broccoli*, prick-out any that is sufficiently advanced in growth. Sow a full crop of Cape and Grange's Early White. *Cabbage*, where they were planted in the autumn at a foot apart in the rows, every alternate plant to be pulled as required for use. This will give those that remain time and space to attain perfection. *Cardoons*, sow a late full crop. Plant-out the early crop; if they were sown in the seed-beds, choose a rich piece of ground for planting them out. It will not be necessary to plant largely of the first crop, as it will soon run to seed. *Celery*, prick-out some of the most forward into trenches, keep it well watered in dry weather. Continue to prick-out from the seed-beds for late crops. *Cucumbers*, where seed has been sown on ridges to produce Gherkins, thin the plants to three under each hand-glass. Keep up the heat of the principal beds, if fine long fruit is required. *Dwarf Kidney Beans*, earth-up those that have been planted-out, and sow again. *Endive*, make another small sowing. The sowing for the main crop should not be made before the middle of the month. *Lettuces*, make a sowing of two or three sorts, by this means the season of one sowing is prolonged. The Paris Cos is a very good summer *Lettuce*. *Mushrooms*, the hay with which the productive beds are covered will require renewing occasionally, as it is liable to

get damp and mouldy, which will rot the Mushrooms. *Potatoes*, take the first opportunity of earthing-up all that are sufficiently forward, the others to be hoed between, to loosen the earth and to destroy the weeds. *Turnips*, make a good sowing for early autumn use. Thin-out the advancing crops. *Vegetable Marrow*, plant out this very useful vegetable on a rich piece of ground, where there is plenty of room for it to grow.

FRUIT GARDEN.

Activity must now be exercised in this department, as the rapid growth of the trees will require constant attention in stopping, removing superfluous shoots, and nailing-in. Peaches may now have their final disbudding. Let every shoot not required be removed with a sharp knife, and the remainder carefully nailed-in. Give the fruit a moderate thinning, but leave more than will eventually be required, as a portion will probably fall off in stoning. Apricots to be thinned with the same discretion. Keep the lateral shoots of Vines closely stopped at the first joint. Strawberry-beds may soon require attention as to watering should the weather become dry. After thoroughly clearing the beds, an effectual soaking should be given, and if a moderate watering from the stable tank can be supplied when the ground has been well saturated with clean water, it will greatly assist in securing large fruit. The beds should be mulched as soon after watering as convenient, in order to prevent evaporation and the fruit from being soiled. Next to slates or tiles clean straw is the best material for this purpose. The mowings of lawns are sometimes used, but this material is objectionable, as it forms an excellent harbour for slugs, soils the fruit, and spoils its flavour.

FLOWER GARDEN.

The weather during the past week has been all that could be desired for present operations. Verbenas and Petunias when turned out into their summer quarters should have the shoots pegged down, the benefit of little basins round the plants will be readily seen, if the weather become hot and dry. Heliotropes and tender annuals may now be planted out with safety. Attend to staking Carnations and Pinks as they grow, this will greatly improve their appearance when in bloom. All annuals to be thinned out as soon as they are well above ground, for if left to grow too thickly they spoil one another. The early-flowering bulbs, as Tulips, Hyacinths, Turban Ranunculuses, &c., should not be left in the ground after the decay of the foliage, as if wet weather occurs they will be making fresh roots, which weakens them for next season. The Paeonies, Phloxes, Delphiniums, Lysimachias, and other tall herbaceous plants must be properly staked.

GREENHOUSE AND CONSERVATORY.

The early-forced Camellias now showing bud may shortly be placed out of doors. A shady border is frequently resorted to. We would, however, place them facing the sun, and provide a light canvass screen to throw over them. All young or other stock growing on for specimens of high cultivation must now have much room. Let it be a rule that no two specimens touch. Weed out all rough, exhausted, or inferior plants. Very young stock of *Ericas*, *Epacris*, and small fancy New Holland plants will be best in a pit or frame, placing the lights to the north. Pinch off the decaying blossoms of hybrid *Rhododendrons*, give liquid manure, and, if wanted for early work, endeavour to force them slightly into wood. Get some young *Thunbergias* put into their final pots for trellising. Look to the runners of the tree Violet, and also the Neapolitan, and do not delay any longer with the *Chrysanthemums*. Attend to plants for autumn and early winter decoration, such as Japan Lilies, scarlet Salvias, tree Carnations, and things of that sort. Give plenty of pot room, good rich compost, a moist atmosphere, and plenty of space for the proper development of the branches and leaves. The atmosphere of plant-houses can scarcely be kept too moist at this season, therefore, sprinkle every available surface frequently, and syringe growing stock lightly twice a-day during bright weather. Go over twiners frequently, and regulate their growth before the shoots become entangled, but avoid keeping them tied too closely, for they are never seen to advantage unless they are allowed to hang in a natural and graceful manner.

PITS AND FRAMES.

Young stock in pits and frames will soon be making rapid

growth, and must be carefully attended to as to watering, stopping, training, &c. Examine Heaths frequently for mildew, and apply sulphur the moment it is perceived, some of the soft-leaved varieties being very liable to be attacked by that pest at this season. Expose Zinnias and other tender annuals entirely, night and day, by removing the lights. Plants that are kept to succeed Tulips, Ranunculuses, &c., should have plenty of room given them. Attend to the late-struck plants, they will come in very useful by-and-by to fill up vacancies in beds, &c. Double Wallflowers, Mule Pinks, and some common Dianthus, Alyssums, Phloxes, perennial Iberises, and many kinds of dwarf Cistus, and Helianthemum, may be propagated under hand-glasses in a shaded situation, and will be found very useful next spring.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

DELIGHTFUL rains on Tuesday evening which have refreshed everything wonderfully, and made not only hoeing, but thinning Onions, Carrots, Parsnips, &c., a work of pleasure, as well as one of utility. The thinnings of Onions dibbled thickly in poor sandy soil, or what is made so by placing a little of such soil on a hard bottom, is a good plan of producing pickling Onions on strong heavy lands. We can hardly grow picklers here by any other mode.

Peas.—Have had a nice supply of Tom Thumb Peas from our orchard-house, and also from an early kind we received from an old gardener under the name of Sebastopol, but which, from its appearance, we judge to be Dillistone's Early, of which, however, we shall be more sure ere long. This was planted in front of the lean-to house, and allowed to scramble as it liked to a row of Strawberries in pots. From the same sort we have also gathered on the 22nd out of doors from plants that were turned out from turves. As yet we have gathered none out of doors from Sangster's No. 1 treated in the same way. We suspect that from Sangster's we shall gather double or treble the quantity we shall do from this Sebastopol, or Dillistone's, but then the earliness is a consideration. We know what it is to have ladies and gentlemen going round and counting the pods on Peas and Beans until there should be enough for a dish. We have not yet had a dish of Broad Beans, but shall not be long in having them, and to help the rapid swelling of the Beans inside the pod have watered a row well with manure water, after stirring the soil on both sides of it. There are some old-fashioned epicures who would place little value on the finest specimens of the artistic cook's achievements when compared with a fine dish of young green Broad Beans. Like many other things, they are often spoiled by the attempts made to disguise altogether that they are garden Beans. We are glad that Peas will now be coming in, as the Asparagus must not be cut much more. We are now allowing all to grow freely, otherwise it would be of little use forcing it. Cabbages, especially those tied, are now hearting freely, and when we taste one we cannot help wishing that the great bulk of working men should know the luxury that a Cabbage is when cut, boiled, and then eaten, as there is no comparison between such a Cabbage and one that has been lying hours on a stall, after, perhaps, being packed and heated with kindred hundreds in a waggon. For the same reason all market Peas are generally merely so many make-shifts and make-believes. Gentlemen can only have them first-rate when sent from a distance from their own gardens, when they are sent in thin layers, so that they are neither heated nor dried by the air. Gave up planting in the flower garden to sow more Peas, and to stake the secondary and tertiary crops, which want it badly. We have had fine crops of Peas on the ground without staking, but they take up much more room, and the plants are apt to be injured when gathering the pods. The same objection does not apply to

Scarlet Runners when grown without stakes. If the plants are topped when a foot high, the pods will come in great bunches near home, and the only extra care they require is covering the ground with grass or clean litter, or such as will be made clean by a good shower, so that the pods may be gathered clean. Where some 3 feet or so in width can

be spared in a cottager's garden, we know of nothing from which such a supply of valuable nourishing food can be obtained, as from a row of Scarlet Runners, without stakes, but topped, and the mass of scarlet flowers and beans close to the ground. It is to us enough, in most places, to sow these Beans in the beginning of May, but the cottager will act wisely if he sow in light rich soil thickly in April, so that he can cover them or protect them at night, and then plant them out 2 or 3 inches apart in the middle or towards the end of May. When grown on the dwarf system without stakes, a few sheets of paper, an old cloth or two, or a few branches with leaves, will easily ward off the first frosts, and by so doing we have often gathered succulent pods far into November. Of course, we are aware of the fine picturesque effect of such Beans when supported by tall sticks, or held up by strings round the wall of a town garden; but pretty well as much produce may be obtained without the labour and expense of sticks and strings. Strange, that in the northern part of our island so little of this Bean is used by the common working people for supplying varied and wholesome nourishment. Such a subject is well worthy the attention of the large-hearted gardeners who have lived in the south, as the brothers Thomson, of Dalkeith and Archerfield. Would that some could thus be instrumental in increasing the comforts of a thinking, intellectual people. On our last visit to Scotland, we had many evidences that this valuable vegetable was used too much as it was in our boyish days—trained against the windows or the wall as an ornament, not as something valuable to be put "intill" the pot and kettle.

FRUIT GARDEN.

Besides watering Strawberries out of doors, keeping up a good supply under glass, moving a lot under glass that were potted some three weeks ago, thinning Grapes, regulating Melons, thinning and disbudding Peaches in-doors, orchard-house, &c., the chief work has been uncovering all Apricots, Peaches, &c., out of doors—that is, removing the last of the sprays with which they were protected, washing well to take away all collected dust and filth of any kind. Examined Cherries to see if there were any green fly, or rather black fly, and where there was the appearance of anything, dipping the point of the shoot into quassia and soap water, as a very cleanly and effective operation. The only thing that as yet seems to trouble us are some caterpillars, that roll themselves up in the leaf, and others that riddle the leaf as if permeated by myriads of small shot. However, as yet, they are within bounds, and have done but little harm.

ORNAMENTAL DEPARTMENT.

Here much time has been taken up with potting greenhouse and stove plants, giving extra water in these warm days, when the thermometer even at night rivalled the heat of a hot August, instead of the month of May; rolling and mowing lawn; fresh surfacing and rolling walks; moving some herbaceous plants, &c.; but the chief labour has been preparing, hardening-off, and making the ground all right for turning out lots of bedding plants. Those who thought proper to read some late remarks, would perceive that in the preparation of the plants, and that of the soil, are to be found two elements of success. We knew of some hundreds of Scarlet Geraniums taken last year from a shadedinery, and at once planted out, but it was the middle of September before they recovered from the sudden check. A ten-days hardening-off would have saved all the annoyance. It sometimes happens that to finish a group, plants must be used not so well hardened off as we would wish, but in such a case a few branches, or something of that kind, is placed around them until they become used to the situation. A dull, shady day should be chosen for removing entirely all such protective shading. We have just planted our main straight ribbon borders, which rise from a walk between them. The planting is with smaller things this season, but which will fill the border, and be, we hope, of a regular gradation as to height. From the walk and the grass verge the planting is as follows in straight lines—*Cerastium tomentosum*, *Lobelia Paxtoniana*, *Cloth of Gold* *Geranium*, *Purple King Verbena*, *Centaurea candidissima*, *Brilliant Geranium*, *Aurea floribunda Calceolaria*, *Stella Geranium*, and *Ageratum*.

We do not intend that any of these shall need much pegging or training to keep them uniform in sloop and full, yet distinct, in line so as to prevent stiffness.—R. F.

COVENT GARDEN MARKET.—MAY 27.

Abundant supplies of Cabbages and other Greens continue to pour in. Very good spring Cauliflowers are now to be had, and are taking the place of Broccoli, now nearly over. Of Peas there is an unusual quantity for the season, and they sell at from 4s. to 8s. per bushel; and of Kidney Beans there is also a fair supply. Lettuce and other saladings is in great request. Grapes are sufficient for the demand, and very good. Foreign Cherries, consisting of Early Purple Gen and May Duke, have now come in.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	$\frac{1}{2}$	0	4	0	Mulberries	punnet	0	0	0
Apricots, Green, pottle	1	0	1	6	Nectarines.....	doz.	13	0	36
Cherries.....	lb.	1	0	2	0	Oranges.....	100	0	14
Chestnuts.....	bush.	14	0	20	0	Peaches.....	doz.	24	0
Filberts.....	100lbs.	40	0	0	0	Pears (kitchen).....	doz.	2	0
Cobs.....	do.	50	0	60	0	dessert.....	doz.	0	0
Gooseberries ..	$\frac{1}{2}$ sieve	3	6	4	6	Pine Apples.....	lb.	6	0
Grapes.....	lb.	8	0	14	0	Plums.....	$\frac{1}{2}$ sieve	0	6
Lemons.....	100	5	0	10	0	Strawberries.....	oz.	0	6
Melons.....	each	8	0	12	0	Walnuts.....	bush.	14	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.			
Artichokes	each	0	4	to	0	6	Leeks.....	bunch	6	3	to	6
Asparagus	bundle	3	6	6	0	Lettuce.....	per score	1	0	2	0	
Beans Broad.....	½ sieve	0	0	0	0	Mushrooms.....	pottle	1	0	2	0	
Kidney.....	100	1	0	1	6	Must. & Cres., punnet	0	2	0	0		
Beet, Red.....	doz.	3	0	4	0	Onions.....	bushel	5	0	7	0	
Broccoli.....	bundle	2	0	3	0	pickling.....	quart	0	6	0	8	
Brussels Sprouts ½ sieve	0	0	0	0	1	Parsley.....	½ sieve	1	0	1	6	
Cabbage.....	doz.	1	6	2	0	Parsnips.....	doz.	1	0	2	0	
Capicums.....	100	0	0	0	0	Peas.....	quart	4	0	0	0	
Carrots.....	bunch	0	7	0	10	Potatoes.....	bushel	2	6	4	0	
Cauliflower.....	doz.	6	0	12	0	Radishes doz. bunches	0	6	1	0		
Celery.....	bundle	2	0	3	0	Rhubarb.....	bundle	0	2	0	4	
Cucumbers.....	each	0	6	1	6	Savoy.....	doz.	0	0	0	0	
Endive.....	score	2	6	3	0	Sea-kale.....	bushel	0	0	0	0	
Fennel.....	bunch	0	3	0	0	Spinach.....	bushel	1	0	2	0	
Garlic and Shallots, lb.	0	8	0	0	0	Tomatoes.....	doz.	6	0	0	0	
Herbs.....	bunch	0	3	0	0	Turnips.....	bunch	0	3	0	6	
Horseradish ..	bundle	2	6	4	0	Vegetable Marrows doz.	0	0	0	0		

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

KILLING WOODLICE (*J. Mackenzie, M.D.*).—We know of no better plan of getting rid of these pests than boiling them, where it is practicable to do so. In places where boiling water cannot be used for fear of spoiling plants, there is no better plan than laying traps for them, and keeping several toads and frogs in the house. Constant attention to trapping and scalding them with hot water, and keeping a supply of toads and frogs, will soon bring them to grief. You are quite right in thinking early thinning of fruit is necessary. Grapes, especially, should be thinned, many of the varieties as soon as they are set—indeed, we this year thinned some before they came into bloom, and we have no doubt that it will be very beneficial to them. With regard to Peaches, Nectarines, &c., the fruit-buds should be well thinned before they open their blossoms. The best time to do this is when the buds are about the size of a small barleycorn.

PEACHES, NECTARINES, &c., AGAINST A PARK PALING (*An Old Subscriber*).—We do not think that either of the above fruits would do well against a park paling unless the boards fitted closely together, which is generally not the case with the pieces of wood park pallings are made of. They are usually split or cleft, instead of sawn. Pears might do against a fence of this sort, but why not build a wall if fruit-growing is an object with you? The wall would not cost much more than double the expense of the park paling.

LIVFORD HORTICULTURAL SOCIETY (*Farnborough*).—If the names of the Directors are not accepted as a guarantee that it is a sound Society, nothing that we can say would be more influential. If the Directors ever have cause to be dissatisfied with the management they are too practical not to apply a remedy.

WATER-PROOFING (*A Donegal Subscriber*).—To render the sail-cloth tubing waterproof it should be painted over with Indian-rubber dissolved in naphtha. Your plant is *Habrothamnus fasciculatus*.

BUNCHES OF GRAPES FALLING (*R. G. B.*).—They are very severely shranked. It usually arises from the roots being torpid. If outside they are probably too cold, and if inside they have probably descended too deep. In the former case we should cover the border at night, and remove the covering during sunny days. In the latter case we should remove the soil, so as to bring the upper roots within 3 or 4 inches of the surface, and use tepid water when they require moisture. It is not improbable that you have applied water too abundantly and too cold.

CATERPILLARS ON WHITE THORN (*A. Subscriber*).—The "cobwebs" containing blackish caterpillars are the larvæ of the small Ermine Moth. The only remedy we know is to have them picked off and crushed. This would quickly be done by children, and they might be rewarded for the number of the white parent Moths they caught. These Moths will appear in a few weeks.

STOCKS (B. N.).—The *Ten-week* is so called from the time elapsing between its sowing and blooming. It is *Mathiola annua*. The *Brompton* is *Mathiola simplicicaulis* of some, but is generally considered to belong to the same species as the *Queen*, which is *M. incana*. The *Intermediate* is *M. græca*, and so called because its leaves are smooth, so as to place it as an intermediate between the *Stock* and *Wallflower*.

TRELLIS FOR SLOW HOUSE CUCUMBER (*J. B.*).—The trellis will do very well. Cucumbers are much better in every way grown on trellises than in any other mode. If we had had the forming of a trellis we should have avoided the dip in the centre. It should have been put in at equal distances from the glass all over—say 16 or 18 inches. The night temperature is not quite enough to grow Cucumbers well, it should be from 65° to 70°. The day temperature will do very well.

VINE LEAVES SCORCHED (*J. H. Cook*).—The cause of your Vine leaves scorching and curling up is want of moisture at the root, and we should think that you have not been in the habit of giving air early enough in the morning. If this is the case the sun has done all the mischief. To prevent further injury apply plenty of water to the roots and give more air, and earlier in the morning; if the weather is bright, open the front lights; if dull, only open those at the back of the house. For further instructions see an article in another page.

CREEPERS FOR THE NORTH-EAST WALL OF A HOUSE (*A. Subscriber*).—We should think a slight projection over the main walls rather an advantage than otherwise, especially for some of the more delicate kinds of creepers, because it shelters them well from the wet. The following is a list of the kinds we would advise you to plant:—Several of the best variegated forms of Ivy, Ampelopsis, or Virginian Creeper, *Bignonia caprolata*, *Clematis sempervirens*, *C. Hendersonii*, *C. montana*, *C. vitalba* (the *Traveler's Joy*), *Jasminum officinale*, *Lonicera grata* (evergreen), *Wistaria*, white and blue. Some of the climbing *Roses* would also answer well for the purpose, such as *Ruga*, *Garland*, *Crimson Boursault*, *Dundee Rambler*, *Rampan*, &c.

BOTANICAL QUERIES (*A. Constant Subscriber*).—We think you cannot mean what your request includes—viz., "The orders and tribes into which Geraniaceæ are divided, with their specific names and characters." To do this we must go through all the species in the genera *Erodium*, *Geranium*, *Monsonia*, *Sarcocaulon*, *Pelargonium*, and *Hypochaeris*, and if we included, as you add, "bedding Geraniums," we should have to fill a volume. We shall publish the report of the Royal Horticultural Society on bedding *Pelargoniums*, which may answer your purpose. It is quite impossible to answer such sweeping questions as you ask about *Ponies* and *lisses*, number of species, colours, &c. You must refer to London's "Hortus Britannicus," or the "Cottage Gardener's Dictionary."

DISPOSAL OF MARKET-GARDEN PRODUCE (*W. W. W. W.*).—Apply to a salesman, or advertise.

SIBERIAN ARBOR VITÆ (*A. Reader*).—We are not surprised at your uncertainty about this tree, for not only are there discrepancies in nurserymen's catalogues, but in the writings of botanists. We believe that *Thuja plicata*, *Wareana*, *sibirica*, and *tatarica*, if not identical, are compact-habited forms of *Thuja occidentalis*. There are three species of the *Halesia* or *Snowdrop Tree*; shrubs about 8 feet high, with white, Snowdrop-shaped flowers; natives of North America. Gordon's "Pinetum" might suit you.

INSECTS (*A. New Subscriber*).—The insect sent from the Vine is not the Vine bug. It is the old enemy, *Otiobrychus vastator*. Hunt for it after dark with a lantern, having first laid a sheet of paper under the tree. The small shoot was so dried up and crushed that we could make nothing out of the apparently white eggs.—W.

PORTABLE BOILER (*A. Subscriber*).—We know of no maker of the boiler of which we gave a drawing at page 389. It is an American invention, and we noticed it because we think any iron manufacturer who made them in this country would find a good sale for them. If you applied to some such manufacturer who advertises in our columns he would tell you for what price he could make you one.

SPOT ON CAMELLIA LEAVES (*Elizabeth*).—We should think the spot on your Camellia leaves has been caused by the sun. The plants should never be placed in positions where the direct rays of the sun can strike them.

SEEDLING PELARGONIUMS (*P. Drummond & Co.*).—Your seedling *Pelargoniums* appear to be good, but neither of them is new in colour. The pink one is very bright, but there are many as bright. We should prefer seeing plants of both seedlings before giving an opinion of their merits. The petals had all fallen, therefore it is impossible to speak of the form of the flower and size of the truss, &c.

ALPINE AURICULAS (*Tyro*).—An Alpine Auricula has the outer edge of the petals shaded by a mixture of two colours not separated into distinct bands of colour, as in the edged varieties. The paste round the tube is yellow instead of white, as it is in the edged and in the one or self-coloured varieties. Your specimens are—1, *Cerasus padus*, or Bird Cherry; 2, *Halesia parviflora*, or Small-flowered Snowdrop Tree.

PLANTING AN ORCHARD IN THE WEST OF IRELAND (*M. A. C.*).—It is difficult without knowledge of the locality, to point out what would be the best kinds of fruits to grow, as from an acquaintance with the fruit-growing counties near London, we know that even the distance of less than half a dozen miles makes a great difference in the character of soil as regards its suitability to certain varieties of fruits; in other words, the same kinds do not prosper equally well at places but a short distance apart, even when soil and situation seem to be alike. We may, however, say, that as a universal rule or nearly so, Cherries do best in a grass orchard, while other fruit trees do not seem to be injured by the ground between them being cultivated, provided the soil be moderately deep, and the subsoil not objectionable; but as the trees grow older, it is usual in the orchard districts to do away with the under-cropping and sow the ground with grass. To a perfect stranger we would say that he may plant five-foot standard Apple and Pear trees 20 feet apart, or if 24 they would be none the worse; or if he prefer an orchard of dwarf trees, 15 feet might do; but then all hopes of having it in grass must be abandoned. We have seen trees spaced 30 feet apart with advantage, and also seen less than 12 feet allowed. We fear we cannot give him much information as to kinds, but if he plant Lord Suffield, the New Hawthornden, Dumelow's Seedling, Sturmer Pippin, and Winter Queening, he cannot well do wrong; but for table kinds and also for Pears he had better consult some skilful cultivator in the locality, whose experience has enabled him to say what are likely to do well, and what not, and although "M. A. C." need not necessarily act on all the information so gained, he may benefit much thereby.

DUBROVNIK OR FAUIT TREES (*Critic*).—We never did nor can we recommend Mr. Wardle's translation of this book. Mr. Wesley's advertisement makes an erroneous statement. The quotation is from a correspondent's communication.

NAMES OF PLANTS (*W. Clark*).—*Asplenium hemionitis*. (*J. B. Boyd*).—The Fern is apparently a sterile frond of *Polybotrya cylindrica*, and the leaf we think is of *Corynocarpus invagatus*. (*T. C. D.*).—1, *Saxifraga sarmentosa*, L.; 2, *Spartmannia africana*, L.; 3, *Habrothamnus fasciculatus*, Miers; 4, *Spiraea salicifolia* rubra, Hort.; 5, *Spiraea trilobata*, L.; 6, No flower. (*H. C.*).—1, *Coronilla emerul*, L.; 2, *Viburnum lantana*, L. (*Critic*).—We cannot name plants from their seeds. 1 is a leguminous seed, perhaps of the genus *Erinacea*. 2 and 3 are, as you suppose, the same, and are fruits of a species of *Rhamnus*. 4, Fruit of *Xylophus lotus* (?) (*Banksiana*, *Surbillon*).—The leaf sent may belong to *Lomatia salicifolia*, Br., but we cannot decide without better materials. It was introduced by Messrs. Loddiges in 1808.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending May 27th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun. 21	30.033	29.940	82	59	57	54½	E.	.50	Dry haze; very fine; sultry; thunder, lightning, and rain.
Mon. 22	29.950	29.921	76	44	59	55	S.W.	.00	Very fine; sultry; low white clouds; very fine throughout.
Tues. 23	29.964	29.956	77	45	60	56	S.	.19	Fine; cloudy; overcast; warm at night; rain.
Wed. 24	30.025	30.025	69	37	60½	56	E.	.00	Overcast; exceedingly fine; deep blue sky, with white clouds;
Thurs. 25	30.107	30.063	76	35	61	56½	S.	.00	Very fine, with warm S. wind; fine at night. [very fine.
Fri. 26	30.068	29.882	77	47	61	57	S.	.00	Very fine, with light clouds; fine and warm at night.
Sat. 27	29.862	29.840	75	52	61½	58½	S.W.	.07	Heavy dew; very fine; clear blue sky, with scattered white [clouds; overcast and warm; rain at night.
Mean	29.995	29.947	76.00	45.35	60.00	56.21	.....	0.76	

POULTRY, BEE, and HOUSEHOLD CHRONICLE

POULTRY JUDGES AT BIRMINGHAM.

Knowing how willing you always are to open your columns for the discussion of any important matter in reference to poultry, I am sure the question of appointing Judges for the great Birmingham Poultry Show is of such importance that you will willingly find room for the correspondence this letter may lead to. I am not an unsuccessful exhibitor at Birmingham, therefore I can write upon this subject without the sarcasm in which so many writers indulge; I am not going to find fault because I do not win, for I have

rarely shown at Birmingham without taking prizes, and when I have been beaten it has always been by birds superior to my own; and I am not going to find fault with the Judges that have hitherto acted, although I have not the least doubt that many errors have been made, and whoever acts as Judge at a show of such magnitude as Birmingham must be clever indeed to judge it without a mistake or a complaint.

Some very angry letters have appeared strongly condemning the appointment of judges who are dealers in poultry, and the grounds of objection are too strong for my pen to attempt to argue against; but I cannot but confess that I should regret to see Mr. Bailey's name erased from the list of Birmingham Judges. There are many varieties

offowls of which I believe Mr. Baily to be a most important judge. The responsibility of the Judges at Birmingham appears to increase every year, and will considerably so this year, in consequence of the increase in the prizes, and many valuable silver cups are given in addition by the amateurs. I do think that if a large amount of valuable silver plate is added to the prize list by the exhibitors, the Council ought to consider their wishes as to who shall award those important prizes, and I wish most respectfully to ask the Council, through the medium of your Journal, how it is that we are not allowed the assistance of the most satisfactory judge in the kingdom, Mr. E. Hewitt?

I am a constant reader of your Journal, and notice that nearly every show that takes place is judged by Mr. E. Hewitt, and it is very rare to hear a complaint, and I am satisfied I express the unanimous view of the poultry amateurs of England, when I state that it is their most anxious wish to know that he will act as one of the judges at our next Birmingham Show. I trust the Council will take into full consideration this appeal, and unite the name of Mr. E. Hewitt to the list of Birmingham Judges, whose name I am sure will restore much of lost confidence, and will prove a most satisfactory addition.—A BINGLEY HALL EXHIBITOR.

[The writer, as he intimates, is one of the most successful of exhibitors, and we can state emphatically that we know that the Council of the Birmingham Show would gratify exhibitors generally, and remove much obloquy from themselves, if they added Mr. Hewitt to the Judges of that Show.—Eds.]

BRAHMA POOTRAS—PRIME AGE OF DUCKS.

IF "WILTSHIRE RECTOR" is not much attached to his Cochins I would advise his trying Brahmas, they are the same gentle sensible creatures, good layers, good mothers, and good on the table. I have tried Cochins, and liked them very much, but I think the Brahmas are superior. They will fully appreciate a run in his neighbour's field, but they will not fly over a fence into any garden, however tempting. My only grief is that they must be killed sometimes, for it is painful to give the order, when they walk about with you like dogs, and trust you so entirely.

I should be glad if any one would tell me if it be better to keep Ducks until they are two or three years old, or to rear young ones every year for breeding.—M., *Sunny Vicarage*.

[Mr. Baily fully endorses all you say about Brahmas. They are, in his opinion, superior to Cochins, and thinks that those who say they are identical have a great deal to answer for. A second-season Duck is better than a first, and therefore we advise you to keep those that have proved themselves good ones. We often keep them for four years or seasons, and have no reason to repent it.]

HATCHING THIS SEASON.

I do not for a moment suppose that any persons having the least claim to respectability would play any tricks with the eggs they dispose of for sitting, but as I have this season purchased sittings from some of the best yards in the kingdom, I will, with your permission, give you the results of each sitting.

On the 12th ult., the second day after receiving them, I put a dozen of Capt. Heaton's celebrated Buff Cochins under a very steady hen in a basket, with 3 inches of sand at the bottom, and a turf on the sand. When two days overdue I examined the eggs and found all bad but one, which contained a chick, nearly matured, but dead.

On the 24th inst., I have a sitting of Mr. J. Baily's Spanish due, and will also with your permission send you the results.

I may state that out of a sitting of my own, Partridge Cochins, due on the 13th inst., I only hatched four, nearly all the others seem to have died in their shells some few days before due.

I am told by all my friends (amateurs like myself), that my houses and yard are all that can be desired. Of one thing I am certain, that they are scrupulously clean, yet somehow or other I have been singularly unfortunate with

all my sittings at present. Will you inform me if cocooned fibre refuse on the ground is objectionable for sitting instead of short straw, as recommended by Messrs. Crook?—PACOT CROSS.

[We shall be glad to hear of your progress, and to advise you as you go on. This has been an exceptional hatching-time: we know many instances in which eggs have failed where the previous sittings from the same yard, and under the same management, hatched twelve or thirteen. When your chickens die in the shell it is from being too dry; moisten every egg for six or seven days before hatching. We never heard of short straw for a nest, nor do we in any way approve of baskets for sitting hens. Let your nests be on the ground, put a moist sod for the bottom, over that you may put straw enough to keep the eggs in, but not short straw. If we wanted to insure disappointment in hatching, we would advise to set the hens in baskets partly filled with short straw.]

DOUBLE EGG FERTILE.

I SEE in a letter signed "CHANTICLEER" a doubt thrown out as to whether a double-yolked egg is less prolific. I hasten to inform "CHANTICLEER" and your readers that a few days ago an egg (Dorking), set by me produced two chickens. The egg was chipped and one chicken partly got out of the egg, but whether from want of room, or from being crushed against each other by the hen, they died before getting quite clear of their narrow home. Both chickens were well grown, and looked healthy.—Rev. E. C., *Walton Parsonage*.

THE DERBY CANARY AND ORNITHOLOGICAL SOCIETY.

HAVING read your remarks upon my recently-published "Handbook, &c., on Canaries and other Birds," which has found favour with many breeders in different parts of England, and to a certain extent meets with your approval, allow me space to reply. As you have "brought me out of my shell," it is quite natural I should have a "chirp" or two, and will leave the subject to the opinions of the many breeders as to whether your remarks on my book have not been made without fair consideration as to what it was intended for. I endeavoured to prepare my pamphlet with care, not only for the benefit of the breeders in this district, but also to afford the fanciers in other towns an opportunity of learning what the Derby breeders have done, so that it might act somewhat as a guide to them, but never intended it as of "interest for the general reader."

I am as great a friend to the "general diffusion of the Canary fancy as any man breathing, and when I wrote the eighth rule, that "No person is admitted as a member of this Society unless residing in the county or borough of Derby," knew full well what benefit I was affording to the members in this particular locality. It was not intended that a code of laws suitable for a local society should be also suitable for an All-England show; and as to your expressing "a regret at this exclusiveness in these days of railroads," the very fact of some of the Derby breeders being able, well able, to bring out also an All-England show annually, second to none in the kingdom, proves your remarks against the eighth rule of our local society to have been made without a knowledge of what actually takes place in Derby towards promoting the extension of the fancy, facilities being given to the breeders and fanciers in all parts for availing themselves of the railroads.

I know full well the anxiety and attention that has been devoted towards making the Derby local Society what it is, and I feel proud in saying there is not existing another Canary society of a local kind that can excel ours. The Committee of the Derby Society have at all times been willing to render assistance to any breeders wishing to form a club in any other town, and what effect has the formation and encouragement of local shows in different parts of England? Why, they act as feeders and supports to All-England shows, by birds being sent for exhibition. They likewise cause an increase of breeders, and the more breeders and fanciers the greater the chance of the classes

being well filled with good birds, and if the fancier be one who gives his mind to the cause, he will soon cast on one side mongrel stock for first-class blood. My object is to increase the love for birds. As a breeder I have had much practice, and have with my pen publicly, and more especially privately, done what I could to further and encourage the study of birds, as to which fact many gentlemen (amateur breeders) can bear me out.

The remarks on the Belgian birds, and the classification of some of them, savours so much of what I have before had to contend with, that I could not prevent a smile on seeing a signature at the foot of an article in the same Number of your Journal, and thinking of past remarks respecting the Belgian birds, the kinds exhibited at every All-England show. As to the erect Belgian, or the Dutch birds, I like to see them, and would ever be willing for classes to be set apart solely for them. It would not do for marked or ticked Belgians to be classed with variegated Belgians, for the all-important reason that the marked or ticked birds are mostly bred from clear birds, and possessed of pure Belgian properties, fully equal in blood to the clear birds. The variegated Belgians are not so good in true Belgian form, and how is it possible to correctly judge a straight bird (or one not possessed with good back and shoulders), evenly variegated, with one only slightly ticked or marked in feather, and first-class in other respects? And, again, it would never do to have yellows and buffs judged together in one class. You say, "Would it not be better to have one standard for the best marked pied Belgians?" What advantage, I ask, can there be in throwing several classes into one whilst we have such choice specimens entered in each class? And while contracting the Belgian classes, you advocate new classes for Goldfinch Mules—namely, dividing them into clear and pied classes. I ask you how many clear Jonque or yellow Goldfinch Mules would be likely to be brought forward? I know, perhaps you do, there would not be such difficulty in finding two or three, or perhaps more, clear mealy Mules, but the two classes would be miserably weak. I venture to say that to the clear Jonque Mule class there would be said, "No entry."

In conclusion, my hints about cats apply generally, and not to your pussy, which may have received a superior education. I say, again, cats are not to be trusted with birds. It is against their nature not to catch and kill them. Your cat is one amongst hundreds for her merciful kindness towards the feathered tribe.—GEO. J. BARNESBY, Derby.

[We are glad to receive Mr. Barnesby's explanation, and also to hear him speak so well of the erect Belgian or Dutch Canaries, but as they were not included in his book we could only draw attention to the omission; but Mr. Barnesby's reasons for not classing ticked or marked birds with variegated, do not seem satisfactory. If, as his argument seems to imply, the one are straight and the other hunch-backed, it is an additional reason why the classification should be based on form, not on colour, as in this case it seems to us a difference without a distinction. In Pies the preference would be given to the best and most evenly-marked bird without reference to the ground colour. It is only when two are so nearly equal that Jonque would take the precedence of mealy. Clear Mules cannot compete in the class for pies, they are certainly out of place there, but are too valuable to be passed over, though they may be few and far between.

As regards the cats, if only stray cats are met, then, of course, every care must be taken to guard the birds from them; but the assertion made was too sweeping. It is surprising how soon cats may be instructed to live in peace with all domestic pets, and hundreds of such cats may be found among the bird dealers in London.]

DESTROYING THE QUEEN OF A SWARM.

TO-DAY I had a swarm of bees from a stock which had been supered with a shallow straw hive containing several small combs, commenced by the bees last year.

I wished to prevent swarming, and for that purpose I stood at the entrance of the hive as soon as the swarm began to issue, and seized the queen as she came out. I confined her

for a few minutes, but fearing that destroying her would only defer swarming until another princess was raised, I set her at liberty, and after flying about for several minutes, she joined her subjects which had clustered on a neighbouring tree. The swarm was then hived in the usual manner.

I should like to know what would have been the probable result had I destroyed her majesty. I know the swarm would have returned, but would the bees have taken to the super, or would the next young queen have led them off again?—S. E. B.

[We think you were right in not attempting to thwart the disposition to swarm. Had you destroyed the old queen the swarm would probably have issued again a few days later under a young one.]

HIVES WITH ENTRANCES AT THE TOP.

I WAS not a little amused to find at page 352 that Mr. Henry Stuttle (C. Williams at page 277, his previous communication on this subject) wandered from his description of "Hives with entrances at the top" to have a hit at bees' enemies, "the very greatest their inexperienced masters" in general, including your Renfrewshire correspondent in particular. I most decidedly take exception to figure in such company, having always a great repugnance to the black list of the enemies of our little favourites, even although your correspondent be polite enough to add "myself included." Had he been a more careful—probably an older—reader of this periodical, he might have saved his criticism, seeing that my stock being reduced to beat-outs arose from no blunder in practice, but solely from their being contaminated by foul brood imported from Devonshire; on the contrary, my apiary has, with this exception, been on the whole a most prosperous one. He, too, was most unhappy in quoting your "Renfrewshire correspondent" as a sample of the "inexperienced," when, singularly enough, that correspondent was the very one who years ago drew attention in these columns to all the advantages of "end communications to supers," the first discovery on which Mr. Stuttle plumes himself, and, still more singular, was long before familiar with moveable bars, and had them employed in "hives with entrances at the top," his second discovery, possibly about the time Gordon Cumming was firing away with the old rifle.

Although practice does not invariably make perfect, still it often familiarises one with many odd things, and amongst the rest I may be permitted to describe how I came to work and discard hives with entrances at the top.

What induced me first to take a special interest in the honey bee was a number of years ago opening up a couple of the many stocks of bees which from time to time had established themselves in the roof of our house; each colony occupied the vacant space between the "combles" or beams forming the roof, their combs being attached to the inner side of the "sarking," or boards to which the slates are nailed externally, from where they were carried down to the lath and plaster, a depth of about 10 inches. To compel the bees to extend their combs out into the boxes I had prepared and set up to fit the square cut out of the lath and plaster, I had the spaces below the combs boarded off level with the bottom of the boxes; their ends fitting into the spaces were, of course, quite open, and top and bottom fitted with bars and slides for supering and nadiring, with glass fronts and thermometer for observation. The plan succeeded so well that the very first season I took from these two hives half a hundredweight of beautiful honey. The following season to prevent swarming I had to go on nadiring, till latterly I had one of the colonies occupying four roomy breeding-boxes, it consequently followed that the bees wrought exclusively through the original entrance at the top, as I could not cut up the ceiling for every fresh box added; besides, from the level of the roof each additional one was brought further from it.

I had ample opportunities of watching all their proceedings through the glass fronts, and saw plainly the disadvantages of the entrances at the top, they were very much oppressed with heat, and I did not feel disposed to open a space below to communicate with the upper entrance, knowing full well the dislike of the "Sanitary" bee "Commissioners" to all

draughts, particularly through the brood combs of the hive's centre; and there was the constant liability to find pollen, and more rarely, brood in the supers. Often have I taken a chair and sat and watched the industrious little workers dragging their heavy burdens to the top, and failing to force a passage up through the crowd of nurses. Frequently have I noticed the dead workers, grubs, drones, or wasps, drop in the ascent, to be again seized upon and dragged upwards. However, these were minor evils in comparison to the one to which they had to yield. Although with great labour they managed to keep their hives pretty free of dead, they were unable to do so in the case of the small débris. To give them all the aid in my power I had the bars and slides forming the bottom of the lower boxes fixed to frames, and these again attached to the boxes with screws, so that on a cold day I could slip them off for a hurried clean. Unfortunately, however, the topmost boxes and the shelves in the roof were beyond my control, and in the débris there deposited grubs bred rapidly during warmish weather and took wing as wax moths, speedily reproducing their kind. My indefatigable little favourites did everything in their power to combat this new enemy, even to the cutting out portions of their combs, but they so multiplied, fitting through the hives in bands, that latterly the bees became dispirited, and I was most reluctantly compelled to abandon bee-keeping in high latitudes, under the impression that "hives with the entrance at the top" have to the inexperienced only novelty to recommend them.—A RENFREWSHIRE BEE-KEEPER.

DRIVEN BEES.

Do the following circumstances prove that I have failed in driving out a queen with her subjects? On Monday, the 15th inst., I drove a swarm about noon, and placed the hive in the position of the old stock. On Tuesday the swarm all left the hive, but in a few minutes returned. On Wednesday, Thursday, and Friday they swarmed each day, and hung upon a bush close at hand. I hived them in a fresh hive (a straw one, for I have nothing else), each day, and once with three pieces of comb in it made last year. Being tired of this daily swarming and hiving, on Friday night I united them to another swarm which I had driven on Wednesday. However, it appears that they gave their new friends some of their roaming disposition, for all came out together on Saturday, but after about a quarter of an hour returned to their hive, on the outside of which they have now been hanging for a day and a half. Now, if it is probable that there is no queen among them, what am I to do?—C. H. L.

[As the queen is sometimes one of the last to ascend, it is just possible that you failed to expel her, and this would account for the bees so repeatedly deserting their new domicile and attempting, of course unavailingly, to return to their old one. Instead of risking the life of the queen of the second driven swarm by uniting it to the wanderers, it would have been much better to have put the one last driven in its old place, and shaken the errant swarm into the well-filled hive which the others had just quitted. If the bees are now without a queen the adoption of this course with a third stock is the best remedy.]

NATURAL SWARMS.

Nor a few of the bee-keeping fraternity, more particularly beginners, are doubtless looking forward to and watching for that uncertain thing natural swarming. Presupposing that most of them have guarded against that very worst enemy—damp, and that all have succeeded in getting their stocks well forward, I purpose offering a few hints on the subject.

In the first place he must be a very casual observer who does not notice that bees are in want of something like nadering when the hives appear chokefull, and it is certainly bad policy to allow the bees to provide entirely for themselves at this time of the year without administering a little food. Bees which have been well forward previous to a period of cold weather are sure to retrograde without it, while those which have been in want of a little assistance are steadily

progressing. It is not at all times easy to know beforehand the time of a swarm issuing. I have known bees swarm before the hive was quite full or even a royal cell formed, whilst, on the other hand, I have seen them lie out for six weeks and never swarm at all. In the first case, it is prudent for every bee-keeper to be on the watch, and the second case, every judicious bee-keeper should prevent. I would here recommend artificial swarming, as no skilled bee-keeper will allow in swarming-hives, and would equally scout the idea of even seeing his bees become crowded in storifying ones, without additional room. Seeing, then, that the exact time of swarming cannot be hit upon, it is best to be on the watch, and more particularly so on account of bees swarming at all hours, night and day. This at first sight may appear erroneous, nevertheless it is the case. Although at night they do not fly to some spot contiguous to their hive but cluster on the outside of the hive itself, yet it is still the swarm, and if not taken away then two important ends are defeated—viz., honey-gathering and breeding.

The question of course arises, How does breeding stop? I answer, Simply because the queen is on the outside of the hive with the swarms, and there remains until she dies or is killed by her subjects, young queens being brought forward in the ordinary manner. Then is it that piping is heard before the issue of a first swarm.

A friend of mine, who keeps bees on the old-fashioned system of "let alone and they will work their own work, and will swarm when they are ready," had last year out of six stocks only two swarms. He would not be advised to use artificial means, or even so much as to turn up a single hive in order to ascertain its state, but only went about wondering what was the matter, and why there were so many queens thrown out, and satisfied himself with the idea that at certain times of the year bees retained a great number of queens. I could relate many more similar cases, but deem it unnecessary.

It is not a bad plan, in order to keep bees from lying out, to place on the face of their hive a smooth board fixed close to it by a mortice cut for the alighting-board to pass through, and so close to the hive that not a single bee can get between them.—A LANARKSHIRE BEE-KEEPER.

OUR LETTER BOX.

GAPES (Hamburgh).—Give your chickens a fragment of camphor about the size of a pea every night at roosting-time. Put a piece of camphor into the water they drink from. We really have no data on which to found advice about H. Atkin's pictures.

DIARRHOEA IN CHICKENS (R. B.).—Give each chicken half a grain of opium, three grains of powdered chalk, and half a grain of ipecacuanha in a pill daily until the diarrhoea is stopped, feed on bread soaked in ale, give plenty of lettuce leaves, and free access to a dust heap.

REARING YOUNG TURKEYS (A Constant Reader).—Turkeys require a dry spot, well exposed to the sun, but near to a bank, or small covert, or hedge-row. They want dust. The best food is boiled egg, ants' eggs, cooked chopped meat, bread and milk, dough mixed with milk, and made of flour of equal parts of oats, barley, and beans. Onion tops or garlic should be mixed in all their food when young. They should be chopped fine.

SUDDEN DEATH OF CHICKENS (A. J. P.).—When chickens die suddenly it is mostly from injudicious feeding, or from access to some poisonous food. Move your chickens as far as you can from the spot where they die, and give them bread and strong ale.

CLEAVERS (A Constant Reader).—Cleavers, Clivers, or Goose Grass, is a plant known to botanists as *Galium aparine*. It is one of the commonest of weeds, growing on moist banks. The hooky hairs upon it cause bleeding when drawn over the tongue. It is, as you say, often recommended to be chopped up and mixed with the food for young Turkeys.

TEACHING A STARLING TO TALK (W. C.).—It is the common Starling that talks. We have but one British species, except the rose-coloured, which is a rare visitant to this country. By constantly repeating to it the words or short phrases you wish it to say it will learn them, and in the same way it may be taught to whistle tunes. When young the bird is very easily reared by feeding it on raw meat cut up, occasionally worms, bread soaked in water, and hemp seed.

PARROT PLUCKING OUT ITS FEATHERS (Idem).—The reason of the Parrot plucking out its feathers is, most probably, irritability in the skin, caused by improper food of a greasy nature, such as meat, bones to pick, and too much hemp seed. Let it have a shallow pan with water to bathe in, and on a warm day take a watering-pot with a small rose and give it a bath.

VARIOUS (B., Compton Gifford).—The bees which frequent your deserted hive are scouts sent out by some of your neighbour's stocks that are about to swarm. They may possibly herald the advent of a stray swarm, or their visits may continue during the swarming season, ceasing only when it is entirely over. Buy Taylor's "Bee-keeper's Manual." Use Payson's improved cottage-hive for ordinary, and the Woodbury frame-hive for scientific bee-keeping.

TRANSFERRED BEES (A Beginner).—Your hive appears to be going as well. A glass may be put on at once.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JUNE 6-12, 1885.	Average Temperature near London.			Rain in last 38 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
6	Tu	WHIT TUESDAY.	Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. a.	
7	W	EMBER WEEK. Summer commences.	66.6	48.0	57.3	20	47 45	10 48	11 5	12 2	13	1 38	157
8	Th	Portugal Laurel flowers.	68.6	47.2	57.9	15	46 3	11 8	14 6	42 2	14	1 27	158
9	F	Dog Rose flowers.	70.0	47.0	58.5	15	46 3	12 8	13 7	18 3	15	1 16	159
10	S	Mallow flowers.	69.8	47.7	58.8	20	46 3	12 8	10 8	3 4	16	1 5	160
11	Sun	TRINITY SUNDAY. [flowers.	71.2	47.5	59.3	18	45 3	13 8	59 8	56 4	17	0 53	161
12	M	Rough-stalked Meadow Grass	71.6	48.3	60.0	13	45 3	14 8	42 9	55 5	18	0 41	162
			70.9	49.1	60.0	18	45 3	14 8	19 10	2 7	19	0 29	163

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 69.8°, and its night temperature 47.8°. The greatest heat was 90° on the 6th and 7th, 1846; and 12th, 1842; and the lowest cold, 34°, on the 9th, 1862. The greatest fall of rain was 1.48 inch.

A FEW NOTES ON CROPPING A KITCHEN GARDEN.



UCH pleased was I with the remarks on "Kitchen-garden Cropping," by "BURNWOOD, P. D." (page 377), whose mode of obtaining so much produce from a limited space deserves to be widely known, not only because it shows what may be done, but also as it may induce others similarly situated to give an account of their practice, and

as cases differ widely, much useful information may thus be elicited. It is, however, well to remember that there is in general a wide difference between the practice of the country and that of the suburban gardener, the latter having to make the most of a limited space, though to compensate for this disadvantage he can in most cases obtain plenty of manure; while, on the contrary, the country gardener has often more ground at his disposal, but is obliged to be more sparing of manure. Now, although it is not exactly true that manure will do anything, it is nevertheless a very powerful agent in producing some of the more common vegetables. Those of the gross-feeding class can be urged into growth by the aid of this powerful auxiliary where the natural ground from previous hard cropping would seem to claim a rest, but plenty of good dung restores the worn-out soil, and another crop is obtained. Most vegetables delight in rich soil, and may therefore be grown on the forcing system just described; but the practice of the rural gardener is somewhat different, he uses manure sparingly. Very likely there are large grass and arable fields in his immediate vicinity having a claim to a share of the manure-heap as great as his, and he is obliged to be content with a less quantity than falls to the lot of his brother craftsmen living near the great metropolis. There is one practice, however, that is applicable to both, and that is the rotation of crops, which is attended with the best results, and "BURNWOOD, P. D.," has very wisely introduced it into his system, and doubtless with good effect. I will also add one or two modes of cropping which I have found answer very well the double purpose of making much of the ground and at the same time affording the necessary change in cropping.

One of the most important crops in all gardens, large or small, is Cabbage, and with me this crop remains longer in possession of the ground than any other, except

permanent ones, such as Asparagus; in fact, the main crop of spring Cabbages, intended for use in May and afterwards, is generally planted in October on ground that has previously been devoted to Onions, but which has been trenched and manured. The crop usually remains fifteen or sixteen months on the same ground, and is not removed until the second February following its planting, the spring cutting of Cabbage being succeeded by abundance of nice little sprouts, which afford a supply of Greens up to that time, when, perhaps, the hardness of the winter may have rendered them no longer useful. The site they occupy is then dug or trenched, and, if possible, sufficiently early for the soil to be exposed to frost before it is again occupied. Potatoes or Scarlet Runners are then put in, but none of the Brassica tribe, and for a like reason we prefer not planting Cabbage with Peas, as we generally contrive to have one main summer crop of Peas on ground that has not had any of the Cabbage family upon it in the preceding season, as Broccoli is usually planted between the rows of Peas, to occupy the ground when the Peas are taken away. I may mention that if the rows of Peas are 8 feet apart four rows of Broccoli may be planted between, the rows nearest the Peas being only 1 foot from these. Of course care must be taken in gathering the Pea crop, and after the last gathering the haulm ought not to remain a single day. After its removal the ground may be slightly dug, and the space it occupied and the rows of Broccoli adjoining, may be refreshed with a liberal watering of liquid manure; and although the rows nearest the Peas do show a somewhat uneven lanky growth, they speedily recover, and by the end of autumn the crop is about uniform. Of course when this mode of cropping is adopted the Peas sown are those only which come into use not later than August, so as to give as much time as possible afterwards for the autumn growth of the Broccoli.

Returning to the Cabbage crop, from which the above has been a digression, there is nothing, perhaps, in which the practice of the private grower differs so much from that of the great market gardeners as in regard to Cabbages. With the latter it is not unusual to see a large breadth of Cabbages all of a size and all fit to cut at once, and after cutting, the ground is dug or trenched, heavily manured, and a fresh crop is upon it in less than a week. This would not suit a private family, where a great number of different vegetables are wanted at different times instead of a waggon-load at once; consequently the private grower must select the variety of Cabbage that is least inclined to run to seed, and also suit the time of sowing to the same end, so as not have any portion of his crop running to flower either before cutting or afterwards. He may also if he choose sow and plant a few Coleworts; but in general he depends more on the various kinds of Greens, Brussels Sprouts and the like, to carry him through than on Coleworts, which after all differ only in name from the side sprouts of the preceding Cabbage crop. It must also be borne in mind in cropping that the Cabbage tribe occupy a large space of ground,

more so than any other remaining there during the winter, and that the crop which is best to follow another cannot be so precisely determined upon beforehand as to pass into a rule. There are some crops, however, which it is advisable to avoid as a succession to the Brassica tribe, and one of these is Carrots. Potatoes, however, may do, and Dwarf Kidney Beans and Scarlet Runners, as well as Broad Beans, and if necessary a portion of the ground may be set apart for Celery, and the trenches being dug early and well manured, Lettuce or some other light crop may be planted upon the ridges. We have likewise often had summer Cauliflower there, and sometimes a small-topped Potato; but it is not advisable to plant anything that is likely to be late in coming off, for it must be borne in mind that the Celery is the legitimate crop, and its welfare must not be sacrificed for the sake of a temporary occupant.

The rotation of crops is a subject which has been often adverted to in these pages, but I may observe that circumstances frequently occur to derange any established rule, and it becomes necessary to make the most of the ground. A crop of late spring Broccoli may occupy some out-of-the-way place where it would be useless to sow Peas on account of the ravages of small birds, and when it might be too late to plant Potatoes, or, in fact, they might not be wanted there, whilst sundry reasons point out the desirability of planting the plot with winter stuff again. This certainly may be done, but the ground must be liberally manured, and, what is equally beneficial, it will have to remain two or three months of the early part of summer idle or nearly so; certainly a crop of Potatoes or Kidney Beans may in some cases be taken off the ground, but such crops ought not to remain longer than is absolutely necessary in order to insure a due growth to the winter occupants, and where ground is plentiful and manure less so, a rest in the growing season is beneficial. There are many other cases in which any established rule for a change of cropping must be broken through, and with little or no detriment to the vegetable grown, only it is necessary, as above observed, to avoid, if possible, crops succeeding each other that resemble one another in their requirements, as the Cabbage and Broccoli family all do; for although they may be made to do good service on the same ground for a few years, it is only at the expense of the manure-heap or their quality. It is the same with other plants, and as an example bearing on this point some flower-beds were once pointed out to me that were not at all satisfactory, the plants being as much disposed to die as grow, and plants of exactly the same kind had occupied the same beds for a succession of years or until the ground was sick of them, as the common expression is. Robust crops, like those of the kitchen garden when afforded plenty of good manure, are less likely to suffer, still a change is advantageous and may generally be accomplished without loss to the quantity of ground required for each crop, and with much benefit as regards the quality of the produce. I am sure "BURNWOOD, P. D.," will excuse my differing in some little details from his excellent paper, which I commend to the general reader, especially to those near large towns, where every inch of ground has to be made the most of.—J. ROXBOROUGH.

LIQUID MANURE.

THE advantages accruing from the judicious application of liquid manure to various garden crops, have been so ably advocated, its value shown, and the results obtained by its use so often stated, that it may seem unnecessary to say anything more on the subject. It is not with a desire to depreciate the value of manure in a liquid form, nor because I have any discovery to impart, that I take the matter up; but to state my own experience with liquid manure as applied to most flowers, fruits, and vegetables usually cultivated in gardens. I have found that, great as the benefits derived by the horticulturist from judicious and seasonable applications of manure water really are, there is everything to dread from injudicious and unseasonable applications. It varies much, and it is so difficult to know how much to dilute it, in order to have it of the right strength, that it is dangerous in inexperienced hands. I will, therefore, note the various forms in which it has been applied.

DRAININGS OF THE DUNGHILL contain some of the soluble

and most fertilising constituents of the manure. Those who allow them to run to waste lose the ammoniacal substances, the alkaline matters, and the phosphates. To collect the drainings it is necessary that the litter or fresh dung be laid on a concrete floor sloping from the centre to the sides, and all round there should be a channel or gutter concreted or made impervious to water, and falling to the liquid manure tank, which should be sunk about a foot below the surrounding ground level, and be made so that no water but what comes from the manure-heap can pass into it. The tank is best of iron, with a lid perforated with half-inch holes, through which the liquid enters the tank, and is cleared of straw, &c. A tank 6 feet square, and 6 feet deep, will be large enough. This will hold all the liquid that will drain from the dunghill for three months, with the usual average of rainfall. If the drainage from the stables, the cowhouse, pigstyes, and slops from the house, are conveyed to the tank, it will be full in a month or so. I must observe that there is a great difference between the drainings of an exposed dunghill, and those from the stables and offices, in which urine enters largely. The liquid from the dunghill is much less strong, and may safely be applied in moist weather undiluted, or in dry periods diluted with an equal quantity of water. That from the stables, offices, &c., being much stronger, requires to be diluted with at least four times its bulk of water, and occasionally six times will not be too much. If, however, all the waste of a house pass into the tank, and is only so much dirty water, then it may not be necessary to dilute the liquid at all, but take care to have it weak enough. The liquid from stables, cowhouses, &c., and household offices is fully six times stronger than the drainings of a dunghill.

An iron tank is certainly expensive, but I have no hesitation in pronouncing such tanks the best I have had experience with. The next best, in my opinion, are those of stone fastened together with iron cramps, and the joints cemented, but prior to cementing the joints on the inside, ramming firm the soil at the sides, and at the bottom, too, beneath the stone bottom. The joints should be well cemented, and the tank covered with flagstones with a moveable lid or trap door. Stone tanks are equally durable with iron ones. Another durable tank is formed with brick sides and a puddled bottom, the sides outside the brickwork being also puddled, and having a closely-boarded top or flagstones as a cover. In forming these tanks care should be taken to make the bottom very firm, and to carry it beyond the brickwork, so that the puddling carried up outside the walls may unite with the bottom. Not only should good clay be used, but it should not be made very soapy by pouring water upon it; if it is sufficiently moist to be rammed or beaten firmly it will stand water better than very soft clay, for such is apt to crack in dry weather, whilst moderately dry clay can be made firmer, and is not so liable to crack. The joints of the bricks may be stopped with cement, but this is not necessary if the clay be rammed sufficiently. Tanks with brick walls laid in mortar, cemented over inside, and resting on a flagged bottom with the joints cemented, are excellent receptacles for manure water. Common casks may also be used for the same purpose; it is only necessary to dig holes and let them into the ground, previously making the bottom as hard as a barn floor with clay, and ramming clay very firmly round them, and if this is done effectually they form excellent reservoirs for either liquid manure or soft water. These tubs are best connected with each other by a lead pipe, and there is no fear of leakage if the clay is well rammed, and not very wet.

In addition to providing a tank, it is desirable to have water near at hand, with which to dilute the contents. It is not only necessary to provide tanks for manure water, but also for rain water from the buildings around, which is too generally conducted to drains. In order to provide against dry periods, the manure tanks must necessarily be in the ground; but those for rain water should be raised above the surface, and may consist of a number of tubs ranged side by side, and connected with each other by lead pipes. These elevated cisterns being furnished with a tap and hose, the garden crops can be watered without much hand labour, the pumping of water into the water-cart or cistern being avoided. A little contrivance, and some additional expense at first, would effect a great saving of labour, and watering

would become a pleasant instead of an irksome part of a gardener's duties.

Where it is proposed to make the most of liquid manure, a boiler should be set sufficiently high, and conveniently near to allow of the liquid being pumped from the tank into it, and when heated to boiling point the liquid should run into the water barrel without further pumping or hand carriage, or into an elevated tank, to be distributed by hose, sufficient water being added to make it of the right strength. To do this it is essential to have the contents of all accurately gaged, and a proof-stick made that will show, by notches cut in it, the quantity of water or liquid in each. It should show the contents in six parts, which will be sufficient for all practical purposes except one, and that is the syringing of trees with liquid manure. The proof-stick should for the latter purpose be divided into twelve parts, each part showing an equal volume of the contents. All the tanks, barrels, and their contents being known, it is easy to dilute liquid manure by taking some out of this and adding to that, and so on. For syringing it is essential to have an engine fixed on the water-barrel, in addition to a tap to let off the water; but there will be little necessity for carrying the water at all if hose be provided, and then the work is done much more expeditiously. The engine on the barrel will be found suitable for syringing trees, the barrel being situated on the walk. Messrs. Warner's engines, such as are ordinarily placed in buckets, are easily fixed in a water barrel, and they are excellent for freeing trees of insects, and refreshing their foliage, the water being thrown easily against the trees over a 20-foot border, by employing a longer lever or handle than is usually affixed to them.

In whatever way the water is conveyed, by hose, carts, or water barrels, it is desirable to lessen as much as possible hand labour, and never to carry water in a watering-pot where a quantity is required, and it can be distributed over the ground by its own gravitation. Carrying it in watering-pots is a great waste of time, and prevents many things, that would be all the better of water, receiving any. A few yards of hose will be of much assistance in watering a garden.—G. ABBEY.

(To be continued.)

GARDENERS CLAIMING PLANTS GROWN ON THEIR EMPLOYERS' PREMISES.

My gardener is leaving me. Contrary to my expressed wish, he has purchased plants and placed them in my greenhouse. It has been a point of disagreement with us for two or three years. He has lost many plants which I have purchased, and said it was because they were not good ones, and what he has bought he says have prospered. I cannot say in a very large stock what he has purchased, or what he has paid for them, or what he had given to him. He claims a very large number, or I am to pay him for them. Many of them so claimed I should have said were mine. I have no wish to be hard upon him, and should give him a present; but I cannot but think that he is at my mercy, and that he has no legal right whatever to them, even if he could bring witnesses to prove that they were his. I shall feel greatly obliged by a correct opinion on this.—NORTHUMBERLAND.

Your letter contains matter of very great importance. A good deal of looseness and misapprehension exists on the subject. As a gardener of some experience now, I got into disgrace with an old gardener lately, because in a friendly way I told him he spoke rudely if not very imprudently to his employer. That employer admired some plants and beds, and in his generosity wished the gardener to collect cuttings and slips of them to send to his friends; when the gardener stated he might have flowers if he wished, but that he considered the plants and slips were his, as he had either bought or begged them himself. Being a kindly man the gentleman said, "Well! well!" and there the matter ended. The gardener insisted that as he brought the plants to the place and they cost his employer nothing, the employer had a right to the flowers for the cost of soil and attention, but had no right whatever to the plants. This, in fact, would be pretty much the same as asserting that a servant might carry on a sort of business on his employer's premises without ever asking that employer's

consent—a system which even with his consent seldom answers long, just on the simple principle of the next to impossibility of serving two masters equally faithfully.

Now, as one who has had a fair share in getting up large quantities of plants in the easiest way, I would wish to impress it clearly and deeply on my brother gardeners that all plants or cuttings they may procure and carry home in the crown of their hats, specimen-boxes, or by whatever conveyance, are their private property until, and no longer, they have taken their place on the employer's premises, and are growing in his pots and soil. From that moment I have always believed that in right and in law they were as much his property as the horse in his stable or the paintings in his mansion.

This may moderate the zeal of those who wish something of everything they see when visiting a place, though that enthusiasm has often been the means of making the employer as enthusiastic as the gardener, and thus eventually helped the interests of our commercial establishments. Going direct to the market is generally the best in the end, though merely as a matter of neighbourly feeling I would not wish to see the custom abolished of reciprocally giving and receiving a few cuttings. It would be well, however, for gentlemen's gardeners to discard at once and for ever all idea of their having any property in such things after they are grown. In many instances where a gardener was leaving his place, I have been consulted whether some nice plants that he had reared from begged cuttings were not equitably his, and if he could not send them away before he left. In every instance I have said that legally he had no claim whatever, but that there could be no harm in stating the matter to the employer. In a few cases where our advice was neglected there was much unpleasantness. Even such matters as begging and lending should be done after a clear understanding; it will not do to depend on use and custom if you wish to maintain your honour untarnished. Such looseness of ideas may have partly arisen from the fact that some gardeners, and especially exhibitors, were at one time privileged to purchase for themselves novelties, and to treat the proceeds as their own property. There are many reasons why gentlemen in general should not permit such a course; but when it does exist, being a private arrangement, no one else has a right to interfere. Wherever such a custom prevails it would be most satisfactory for all parties that the agreement was not only clearly understood, but reduced to writing and duly signed; otherwise dissatisfaction, if not something worse, might take place at the termination of the connection of master and servant by death or otherwise.

A servant, however great his zeal, has no right to purchase goods for his master without his consent; and a gardener in thus purchasing should not go beyond the sum agreed upon, unless he has a commission to obtain what is wanted or what he deems necessary. He may purchase as many plants as he likes for himself and pay for them, but he has no right to bring them on his employer's premises without his consent and direct agreement to that effect, and without that agreement the plants become the property of the employer.

That employer, we presume, would be bound by the act of his servant in purchasing, if the act was not repudiated and the things purchased returned. I applaud the kindly spirit of "NORTHUMBERLAND" in wishing to deal equitably with his gardener, but if the gardener purchased contrary even to his expressed wish in the open market from a nurseryman, &c., I suspect he must pay for these plants. To escape all responsibility the practice should have been stopped and the plants returned. I say this because, from our correspondent's statement, there seems to me to have been a looseness of business on both sides. The servant had no right to buy without the employer's orders. He had no right to purchase with his own money, and bring the plants on his master's premises. He was anything but wise if he did so, for these plants became then his master's. But if the servant had purchased plants from a nurseryman, and the master ratified the act of the servant by paying for them, I believe that for a future purchase the master would be bound by the act of the servant; but in such purchases the bill should be presented at the first settlement. It would never do to keep these things in abeyance and make

an unlooked-for charge at a future time. Equitably the matter need be no difficult one, as there will be the tradesmen's bills and vouchers to refer to. Without such vouchers, and of somewhat recent date, the demand for payment or the right of removal would even equitably be out of place. Such a thing would sap the foundation of all confidence between employer and employed. Wishing to stand up for the rights of my order, I am forced to say that, according to the representation given by the employer, the gardener is "at his mercy;" but as the employer himself does not seem free from blame in permitting a continuance of what he disapproved, I trust that if, on examining vouchers, &c., he is convinced that his servant acted more from obstinacy or ignorance than from any worse principle, he will so far waive his legal rights as to treat his servant mercifully if not equitably.—R. F.]

(With all that Mr. Fish has said we fully concur.—Eds.)

ROYAL HORTICULTURAL SOCIETY.

FLORAL COMMITTEE, May 30th.—Many very interesting plants were exhibited at this meeting, at which the seedling Pelargoniums of the year, always so attractive and so looked for by the florist, made their *débüt*, and among them were some first-rate flowers. There were not so many collections of plants as usual, this being a very busy season of the year, and such frequent exhibitions of plants, necessarily prevents the growers from sending them. The following certificates were awarded:—Mr. Williams, Holloway, received first-class certificates for an Orchid, *Promenaea* species (*citrina*), and *Statisia profusa*, a very handsome plant with deep blue and white flowers, most useful for spring decoration; and second-class certificates for *Anæctochilus nobilis*, a very pretty sort. A special certificate was, in addition, awarded for a fine specimen of *Lomaria gibba*. In Mr. Williams's collection were also *Maranta orbifolia*, *Smilax aculeata*, and *Cissus amazonica*. Mr. Veitch had first-class certificates for a beautiful *Maranta*, and *Amaryllis ignescens*, a new hybrid, one of the most beautiful in cultivation, bright fiery scarlet flowers, the centre of each segment having a clear white stripe. Had this *Amaryllis* produced a little better-formed flowers it would have been perfection. Mr. Veitch also exhibited two species of *Adiantum*, which were requested to be seen again. Messrs. Backhouse, York, received first-class certificates for *Asplenium inaequale*, a very distinct and beautiful Fern; *Lomariopsis heteromorpha*, a climbing Fern, from New Zealand, which changes the form of the fronds in its different stages of growth; *Pellea Wrightiana*, quite a new Fern; *Gleichenia cryptocarpa*, a new Fern from Chili, nearly hardy, and very beautiful; and second-class certificates for *Masdevallia* sp., a hardy Orchid; *Hyacinthus amethystinus*, with very pretty, small, delicate blue bells; *Sarana Kamtschatica*, or *Lilium nigrum*, producing very dark almost black flowers. Messrs. Backhouse also sent *Trifolium alpinum*; *Ophrys fucifera*, from Prussia; *Linaria alpina*, an old but good rock plant, very pretty; *Auromone palmata*, with bright yellow flowers; and *Asplenium auricularium*.

Mr. Wills, gardener to Sir P. Egerton, Bart., sent *Verbena Maonetti* Princess Victoria, a very useful bedding plant, with deep rose-coloured flowers, one of the compact and close-habited *Verbenas*, like Velvet Cushion, probably from a cross with *venosa*—a first-class certificate was awarded it as a bedding variety; also Pelargonium President Lincoln, a Zonale with yellowish leaves, no improvement in its class. Messrs. Jackson, Kingston, had a first-class certificate for *Clerodendron Thomsoni* Ballourii, a larger-flowering variety than the species, which it much resembles, more compact in its habit, and a very free-flowering plant. Messrs. Osborn, Fulham, received a first-class certificate for cut specimens of *Robiana pseud-Acacia Decaisneana* with very beautiful rosy flowers, a great acquisition among flowering trees and shrubs. Messrs. Osborn also exhibited *Lilium pulchellum*. Mr. Pilcher, gardener to S. Rucker, Esq., brought a very fine specimen of *Odontoglossum citrosum*, for which a special certificate was awarded. Mr. Eyles exhibited a fine specimen of *Cœlogyne pandurata*, with a noble spike of green and pink flowers, from the Society's garden. From the seedling Pelargonium Maid of the Mill, not

equal to many others; and from Mr. Turner Zonale Pelargonium Rising Sun, with bright golden leaves banded with deep reddish brown zones—first-class certificate; Pelargonium Neatness, a pretty fancy variety; *Bougainvillea glabra*, and a box of beautiful cut Roses. Mr. Nye sent several seedling Pelargoniums. *P. elegans* was awarded a first-class certificate; the others were good flowers, but not sufficiently distinct. Among them were Hero, Marian, Painted Lady, which was much admired for its delicacy of colour, a pale rosy tint, but apparently a shy bloomer; Mars, Jupiter, Purpurea, Atalanta, and Pluto, all of which would have been thought much of a few years ago. Mr. Hoyle, of Reading, received first-class certificates for seedling Pelargoniums W. Hoyle, C. Turner, a very beautiful rosy carmine, excellent form, and good truss; and Progress. Mr. Stone, gardener to J. Day, Esq., was awarded a first-class certificate for *Phalenopsis sumatrana*, a new, distinct, and beautiful species of this interesting genus. Mr. Keynes, Salisbury, exhibited a seedling Zonale Pelargonium, Wiltshire Lass, with bright rose flowers in large trusses, a very free-flowering kind. Several plants were shown in a basket with moss, and produced a very good effect. A first-class certificate was awarded for this plant, which soon found a new owner, being purchased by Mr. Laing, of the firm of Downie, Laird, & Laing.

Mr. Sherratt, gardener to J. Bateman, Esq., exhibited a very curious and new Orchid. A special certificate was awarded to Mr. Bateman's collection of Orchids. A special certificate was awarded to Mr. J. Hodges, gardener to E. Wright, Esq., Birmingham, for cut specimens of very superb varieties of *Cattleya Mossia*. Mr. Bateman brought with him some fine specimens of the beautiful yellow Rose Isabella Grey, grown by one of his cottagers in his garden in North Staffordshire. The Committee having finished their labours in the Council-room visited the Rhododendron tent, and awarded seven first-class certificates to Messrs. Waterer for seedling Rhododendrons Stella, Mrs. John Clutton, H. W. Sargent, Charles Dickens, H. H. Hunnewell, Lady Clermont, and Caractacus, every one of which is of a first-rate character.

FRUIT COMMITTEE.—Mr. Rivers in the chair. Mr. Miller, of Combe Abbey Gardens, sent two specimens of Meredith's Hybrid Cashmere Melon, which were not allowed to be cut; and one of Combe Abbey Hybrid, a smooth, rich, yellow-skinned Melon of an oval shape. The flesh is white, and ripens well up to the rind, but, unfortunately, the flavour was not what was expected from Mr. Miller's description. Mr. Ingram of Frogmore sent a seedling Cherry called Frogmore Early Crown, which is about ten days earlier than May Duke. It is a small red variety, and when fully ripe of rich flavour. Mr. Archibald Fowler sent two dishes of Castle Kennedy Fig, a splendid fruit, large, handsome, and of excellent flavour, to which a first-class certificate was awarded. Mr. Chapman, gardener to His Highness Halim Pacha, sent an interesting collection of Egyptian fruit, to which a certificate was awarded, and among which the most remarkable were a delicious sweet Lemon and a Loquat.

SCIENTIFIC MEETING, May 30th, J. J. Blandy, Esq., in the chair.—The Rev. Joshua Dix having read over the awards of the Floral Committee, Dr. Hogg commented on the principal objects before the Fruit Committee.

Dr. Hogg remarked that the Melon shown by Mr. Miller, gardener to Lord Craven, was, on being cut, found not to be of good flavour, although stated to be excellent. Melons, however, were somewhat capricious in this respect. Early Frogmore Cherry from Mr. Ingram ripened ten days earlier than the May Duke, but Belle d'Orleans was earlier still. The collection of Egyptian fruit from Mr. Chapman, gardener to H.H. Halim Pacha, was next alluded to. The Oranges, it was stated, had suffered from the journey; there were also some Sweet Lemons and Loquats. The Loquat had been fruited in this country many years ago by Lord Bagot, and also by Mr. Bateman, and was to be seen occasionally in Covent Garden, but such fruit came from Malta, and were never so good as those grown in Egypt and the East. With regard to the Castle Kennedy Fig shown by Mr. Fowler, Dr. Hogg stated that it had existed in the gardens of the Earl of Stair at that place for nearly a hundred years. The fruit, as would be seen, was very fine, and, instead of

requiring four months to ripen when forced, it would do so in two, which was a very great recommendation.

The Rev. M. J. Berkeley in commencing his remarks observed that at the last meeting he had stated, in reference to an *Amorphophallus*, that it was fortunate the plant was not in flower, otherwise everybody would have been driven out of the room by its cadaverous odour. The spathe of some of the *Arum* tribe were, nevertheless, brilliant in colour, and, notwithstanding the generally poisonous nature of the order, the tubers of some of the species were edible. Even in our country those of *Arum maculatum*, commonly known as "Lords and Ladies," which is abundant in the Isle of Portland, were macerated, dried, and sold in London under the name of Portland Arrowroot. An *Arisæma*, after the poisonous alkali had been neutralised by fermentation, was also eaten in Sikkin. An unpleasant odour, it was remarked, was peculiar to many poisonous plants, and several instances were quoted; but in no order of plants did such an insupportable odour occur as in *Fungi*, and a coloured drawing of three of the most beautiful, but at the same time most disagreeable-smelling species, were exhibited. But by far the worst, observed Mr. Berkeley, was *Thelephora fetida*, which he met with three years ago in Aberdeenshire, and it made his room smell worse than the "tomb of all the Capulets," and he could not conceal the odour till he had wrapped the fungus up in twelve envelopes of the thickest brown paper. A beautiful *Maranta* and *Amaryllis* from Mr. Veitch, the Alpines from Messrs. Backhouse, and some other plants, were then briefly mentioned, and, in connection with *Ophrys fucifera*, Darwin's theory of the structure of that and other *Orchidaceæ* plants being adapted to certain insects, through whose agency fertilisation is effected. *Robinia pseud-Acacia* *Decaisneana* was stated to be a true hybrid, and *Cytisus Adami* was always considered as such by continental authorities, but Mr. Berkeley did not believe that it was a hybrid at all, but that it had arisen from the union of a cell of *Cytisus purpureus* with one of *C. Laburnum*, and that by this cell-grafting the properties of both species were transmitted to the offspring (*C. Adami*). In the collection of fruits, &c., from Egypt was the Chick Pea, *Cicer arietinum*, which was used as a food for horses, and a peculiar narrow-leaved Hemp, used for smoking and the preparation of hashish. In reference to Figs Mr. Berkeley remarked that there was one species, the Sycamore Fig (*Ficus sycamorus*), which grows on the stem of the Sycamore tree, and to which allusion is made in the book of Amos—"I was no prophet, neither was I a prophet's son; but I was a herdsman, and a gatherer of Sycomore fruit." The word, translated gatherer, in our version means scratcher, and unless the Fig were gently scratched or rubbed on the surface it was not edible, and this seems to have been the employment of Amos. Caprifigation was also effected by a species of *Cynips*, which pierces the Figs, and sometimes by thrusting a straw dipped in oil down the Fig.

Mr. W. Wilson Saunders said that as allusion had been made to the offensive odour of some of the *Arum* family, he would state that when the spathe of *Sauromatum guttatum* first opens, and this offensive odour is exhaled, it rises in temperature. He had found that the temperature of the spathe was 4° or 5° higher than that of the house, and this not on one occasion only, for he had repeated the experiment several times. This observation was not at all new, but it had been doubted whether plants do give out heat.

Mr. Bateman in commencing his observations on the Orchids, directed attention to a plant of *Coelogyne pandurata* from the Society's garden. This, he said, coming from the burning swamps of Borneo, would never succeed under cool treatment; on the contrary it required a very high temperature. Young, in his "Night Thoughts," had said that Nature never puts on the livery of a mourner, but this plant presented pure black in its flowers. At almost every meeting there had been some new *Phalænopsis*, a name which signified moth-like, Blume having mistaken the flowers of the white species for a string of moths. To Mr. Day belonged the entire merit of flowering for the first time the new *P. sumatrana*, before the meeting, and which had been introduced by Messrs. Low. At present it had only three flowers, but flowers, unlike young ladies, look worst when they come out, and generally improve in after years.

All who have studied art were aware that the grotesque must be sought for in the gothic, and among plants it must be looked for among Orchids. Africa had always had the reputation of being fruitful in monsters, and she had lost none of it in the genus *Angræcum*, which were there most numerous. In connection with the subject of plants having tails, he might mention that W. W. Buller, Esq., of Strete Raleigh, had sent a plant of the Mexican *Uropedium Lindenii* to be named, asking whether it was a new species of *Cypripedium*, having not only tails at each side of the flower, but one in front as well, and Mr. Buller, referring to Darwin, inquired whether these tails were not intended to serve as ladders by which insects might ascend to the flowers; but, added Mr. Bateman, "if I were an insect I would rather trust to the stem of the plant than to these rickety tails." Now, although Orchids having tails were found in the New World, they are not like those of the African Orchids, there the tail was found where it ought to be, and tails, too, of prodigious development, in *Angræcum sesquipedale* 1½ foot long. *Angræcum caudatum* was another beautiful species found in Sierra Leone, and the pestilential swamps of the Niger, but though it had been more than twenty-five years in the country, and was easily flowered, one might almost count the times it had been seen. Another African *Angræcum* boasting of caudal appendages of great length, was one of which he held up a specimen from the herbarium of Kew, sent home by Speke and Grant. This he should call *Grantii*, and he hoped that Englishmen ascending or "doing" the Nile, instead of chipping splinters from the feet of Memnon, or the robes of Isis, would pluck the flowers of *Angræcum Grantii*, which should be its name from thenceforth.

Captain Grant said that had he known that the plant was perfectly new to science, he would have brought more, but they had the greatest difficulty in preserving their specimens on account of the water and insects. It was found on a tree whose boughs were covered with green lichens in a fine undulating country about three degrees north of the equator.

Mr. Bateman again rising exhibited a coloured drawing made by Captain Grant of a plant which either that gentleman or some one else must bring to this country. Fifty years ago there were not many persons who cared about Orchids, and Linnaeus, after he had gathered together as many as he knew, said, when the world was fully explored there might be 100, and now the genus *Odontoglossum* alone comprised nearly 100 species, one of the most beautiful of which was *O. citreum*, as exemplified by the plants shown by Messrs. Jackson, and Mr. Rucker's gardener, Mr. Pilcher. The following history of the plant was given by Mr. Bateman in his "Monogram of *Odontoglossum*":—"Early in the present century two Spaniards, La Llave and Lexarza by name, settled at the Mexican town of Valladolid, in the fertile province of Mechoacan. They were both attached to botany, but the younger of the two, Lexarza, was so attracted by the beauty of the numerous Orchids of the district, that to these he devoted himself with an ardour that would have done honour even to the Lindleys and Reichenbachs of our own day. As the result of his labours a little work—'Orchidianum Opusculum' he modestly styled it—presently made its appearance, wherein about fifty species, all at that time new to science, were described with remarkable accuracy and skill. Among the number there was a plant—*Cuitlauzina pendula* he called it—said to be of surpassing loveliness, and to form an undoubtedly new genus, the distinctive characters of which were minutely given. As time went on and the rage for Orchids developed itself in Europe, a keen desire was naturally felt by cultivators to add so fine a plant to their lists; but although many collectors visited Valladolid, and laid hands on nearly all the other desirable Orchids described by Lexarza, still nothing was heard of the *Cuitlauzina*, and on the cover of the latest number of Dr. Lindley's 'Folia Orchidaceæ,' its name may be found in the list of genera 'unknown to the author.'" About the same time Mr. Bateman had ventured to say that a man might readily carry as many tufts of it on his arm as would pay his expenses to Mexico and back, and leave him a handsome surplus besides; but happily the challenge was not taken up. Yet all this while *Cuitlauzina pendula* was amongst us, and, indeed, had been an established

favourite for upwards of twenty years. But if so, it may well be asked, How came it to pass that it was never recognised? For a full reply to this very natural inquiry, Mr. Bateman referred to a most ingenious article in "Bonplandia," by the younger Reichenbach, to whom all the credit is due of having solved a great botanical puzzle, and proved to demonstration that the *Cuitlauzina pendula* of Lexarza is none other than the *Odontoglossum citrosimum* of Lindley. This idea had more than once occurred to Mr. Bateman, but the character assigned by Lexarza to the flower-scape—namely, that it is destitute of bracts could not be reconciled with this view. The *Odontoglossum* which Lexarza had met with had large inflated bracts, whilst in *O. citrosimum* they are very minute, and at long intervals. It now became a question what name the plant was to bear, and however much he was opposed to meddling with established names, he did not see how, in justice to Lexarza, they could do otherwise than adopt the specific name of *pendula*, more especially as the plant was the only one of nearly one hundred *Odontoglossums* that has the flower-stems strictly pendulous. *Odontoglossum pendulum* then let it be to all time to come.

Eighteen new members were elected.

PELARGONIUM SHOW, June 3rd.—This was held in the eastern conservatory arcade, where there was a fine bank, both of show and Fancy varieties, 140 feet in length, in addition to which there were collections of stove and greenhouse plants, and numerous boxes of cut Roses. For twelve distinct kinds Mr. J. Fraser, Lea Bridge Road, was first with large finely-grown plants, in splendid bloom, of *Festus*, *Sylph*, *James Lodge*, *Candidate*, at least 3½ feet across, and in fine bloom; *Bracelet*, *Fairest of the Fair*, *Guillaume Severyns*, *Leander*, *Lord Clyde*, a match plant to *Candidate*, and very telling as a scarlet; *Rose Celestial*, *Beadsman*, and *Lillie*. Mr. J. Ward, gardener to F. Wilkins, Esq., Leyton, was second with good well-bloomed plants of *Pline*, a fine orange scarlet, *Osiris*, *Eugénie Legereaux*, a beautiful free-flowering white variety, *Peacock*, *Prince of Hesse*, *Viola*, *Achille*, *Leo*, *The Bride*, *Spotted Gem*, *Picnic*, and *Etna*. For collections of six the same exhibitor was first with *Lord Clyde*, *Madame Furtado*, *Nestor*, *Rose Celestial*, *Bracelet*, and *Patroness*; Mr. Cox, gardener to Capt. Cahill, Southall, was second; and Mr. Donald, gardener to I. Barclay, Esq., Knott's Green, third. Mr. Weir, gardener to Mrs. Hodgson, Hampstead, was also an exhibitor. In the Nurserymen's Class for the same number, Mr. Fraser, was first with *Roseleaf*, very bright in colour, crimson, *Empress Eugénie*, *Sanspareil*, *Excelsior*, *Prince of Prussia*, and *Pizarro*, all of them nicely grown.

Class 4 was for six new kinds of 1864, and here, too, Mr. Fraser was first. They consisted of *John Hoyle*, a finely-formed orange red, marked with crimson, with a dark top, edged with rosy carmine, altogether a very fine flower; *Profusion*, soft, rosy pink, dark blotch in upper petal broadly margined with crimson, white throat, a very pleasing variety; *Rozine*, rose, with a conspicuous white throat, upper petal maroon, edged with crimson; *Consguard*, somewhat in the way of *Viola*, but with a much smaller blotch in the upper petals; *Exhibitor*, rose lower petals, white eye, and reddish maroon top; and *Rosy Gem*, rose and crimson, spotted in all the petals.

For a single specimen plant, Mr. Fraser had a first prize for *Desdemona*, very large and beautifully covered with bloom.

Fancy Pelargoniums, though scarcely so large in some cases as we have seen them, were, nevertheless, well grown and in profuse bloom. Foremost came Mr. Fraser, the only competitor in the Nurserymen's Class for nine, with remarkably fine plants of *Delicatum* and *Bridesmaid*; the others, *Lady Craven*, *Cloth of Silver*, *Clara Novello*, *Roi des Fantaisies*, *Hebe*, *Celeste*, and *Multiflora* were also good. For these a first prize was awarded, and in the Amateurs' Class for six, a similar position was taken by Mr. Donald, Knott's Green, with compact well-bloomed plants of *Cloth of Silver*, *Decision* a distinct dark kind, *Lady Craven*, *Delicatum*, *Rosabella*, and *Queen of the Valley*. Mr. Cox, gardener to Capt. Cahill, was second; Mr. Weir third.

For six Fancies of 1864 Mr. Fraser, who was the only competitor, had a first prize for *Ann Page*, *Edgar*, *Mrs. Worling*, *Mrs. Ford*, all of Mr. Turner's raising; *Princess Alexandra* (France) after *Cloth of Silver*, and with more

colour, and *Blair Athol*. The plants, of course, were small; but not so the fine single specimen of *Delicatum* shown by the same highly successful cultivator, which was upwards of 3 feet across, and a mass of bloom. A seedling Fancy of 1865, called *Mrs. Brewer*, resembling *Princess Alexandra* in colour, and *Faro*, a show kind also of this year—a soft bright rose with a white throat and maroon and crimson top, were also shown by Mr. Fraser; but the gem of the seedlings was *Charmer* from Mr. Bull, scarlet, the eye white, with a violet tinge round it, and two streaks or feathers running up to the scarlet; the upper petal with a dark blotch and broad, painted, crimson edge: this received a first-class certificate. *Sparkle*, more of a rose colour, but somewhat in the same way, was also a pleasing flower. Mr. Bull also showed several other seedlings, as well as a large collection of new Zonale Geraniums and choice Pelargoniums.

Of miscellaneous objects Messrs. Lee sent a nice group of stove and greenhouse plants, including a large specimen of *Dicksonia antarctica*, *Dracæna Cooperi* and *indivisa*, *Alocasia metallica*, the graceful *Davallia tenuifolia*, *Oreopanax dactylifolium*, &c., and some flowering plants. From Mr. Bull came also an excellent group, consisting of *Dracænas*, one of which, *D. rubra*, was bearing racemes of violet flowers. *Palms*, a good plant of *Platycerium alcicorne*, the silver-variegated *Peperomia arifolia*, *Gleichenia spelunca*, *Araucaria glauca*, and a new erect-flowered *Gloxinia*, *A. Bonnard*, white, with a rose centre circle, mottled with a magenta tinge. Of Roses several fine boxes of cut blooms were shown by Messrs. Lee and Mr. William Paul, to both of whom extra prizes were awarded. Among those from Messrs. Lee were fine blooms of *Mrs. Rivers*, *Victor Verdier*, *Madame C. Wood*, and *Gloire de Dijon*; and of the latter variety a box containing two dozen beautiful blooms was shown by Mr. W. Paul. Another box from the same contained single trusses of the yellow *Noisette Celine Forestier*, each averaging eight blooms and buds, or some half a dozen fully-expanded blooms. In addition these Mr. W. Paul had beautiful examples of *Madame Falcot*, *Madame Villermoz*, *Jean Hardy*, and *Souvenir de la Malmaison*. Mr. Paul also exhibited Beaton's new Geraniums. Mr. Catleugh, Chelsea, contributed *Lilium auratum*, with blooms about 7 inches across; Mr. Ingram, gardener to Her Majesty, Frogmore, a fine Smooth Cayenne Pine, very good *May Duke* Cherries, large and fine British Queen Strawberries, and *Prince Arthur*, a conical-fruited sort; and Mr. Miller, gardener to Earl Craven, Combe Abbey, Hybrid Cashmere and Combe Abbey Hybrid Melons.

From Miss Macdaniel, Upper Norwood, came a frame of dried flowers and foliage, with the colours preserved, and which had much the same effect as a painting. Among them were Pelargoniums, *Forget-me-not*, *Adiantum*, and golden *Gymnogramma*; and the whole had a very pretty appearance.

WIREWORMS.

I see that one of your correspondents is greatly annoyed by wireworms. As no man in the kingdom has suffered from them more than I have or laboured harder to destroy them, and I trust I now may say I have thoroughly succeeded, it is possible that my experience may help him.

I have taken 140 of these crusty villains out of a single Lettuce, and at one time my land so swarmed with them that not even a Tomato could live. Every known, supposed, problematic, utopian, or maniac remedy was tried. Mustard seed was sown, and they fed upon the root; lime scattered broadcast, and they lived in the lumps; rape-cake drilled in, and they thrived upon it; salt, soot, gas tar, chloride of lime, in which last they lived quite happily in a bottle and made jolly! In a word, I can sooner tell what was not tried than what was.

My firm conviction is that cultivation alone can destroy them. Especially during April and May, when they come up in the imago form, let the surface never rest. Again in the early autumn, when they change their skins and are as soft as a slug, *incumbers tempus aratro*. In a hard winter they burrow to a depth of 2 feet and more; you can do nothing to them then. At the end of February they begin, and we must begin at them.

For three years I could grow nothing small, not even

Strawberries, through them; the trees alone they spared. The sod had been newly broken up, and the ground trenched 2 feet deep. Now I hardly ever see one, except in the newer parts of my ground. If your correspondent has plenty of children, he may have some useful revenge by plunging Potato-slices stuck on a piece of stick, and drawing them every morning. But, after all, the only cure is to harass the villains heartily, and in the third generation discomfit them.—R. D. BLACKMORE, *Teddington*.

CUCUMBER PLANTS PRODUCING FEMALE BLOSSOMS ONLY.

I HAVE a Cucumber-frame heated by two flues passing under the bed from the back of a kitchen fireplace, and I have maintained a bottom heat at 8 inches below the surface of 80° or 85°; top heat at about 70°. I planted three plants in the bed last year, and had excellent and robust-looking vines, but no fruit; all the flowers were females, and consequently died and damped off. I have tried this year again, and am getting into the same predicament. I have strong healthy plants (*Telegraph*), but on all the three plants the flowers are all females, not a single male flower can be seen. I water every second or third day with tepid soft water, and then give a good soaking. I have raised excellent fruit in dung-frames, but I must say now that I am puzzled.—C. W. W.

[You had better have an open chamber, or a rough one of clinkers, over your flues, with means of pouring water, not on the flues, but on the clinkers between and round them. However, your case rather surprises us. Try what thinning out freely your great show of female flowers will do. Cucumbers will swell freely enough that never were influenced by the male flower, but of course such fruit will have no seed capable of germination. Thin the fruit, and secure moisture at the bottom without passing the moisture through the soil. A small drain-pipe set on end will enable you to do that. Let us know the result.]

MY PLANTS,

AND HOW AND WHERE I FOUND THEM.—No. 3.

"THERE one can inhale pure breezes, a rural walk, and

'Breast the keen air, and carol as he goes,'

should he have any propensity to indulge in sweet sounds. No innovation on his purse—no mendicant to interrupt his quiet meditations with vescatory importunity. He may pick Buttercups under any hedge, and no policeman order him to 'move on;' and in his solitary ramblings he has nothing to dread but a gipsy fortune-teller and a sticking cow."

Thus writeth Dionysius O'Dogherty, Esq., of that spot in our fair island denominated Highgate. Much more applicable do I deem his rhapsody to the lovely walk adown which (escorted in my mind's eye by my companionable reader), I purpose travelling this summer evening. In a dip in the valley we are sure to find the picturesque group around the gipsy camp, for there a stream of water runs near at hand, leaping bright and clear over the marble-like pebbles common to this neighbourhood. There is the necessary shade and feed for these dark-eyed wanderers, and, above all, a good supply of game for the pot which is now hanging over the fire, and which, if I mistake not, would find it difficult to escape the quick eye and fleet feet of the lurcher who is keeping guard over the vans. We have Pine woods to our right and left, a vast moorland before us, and a long tortuous road to pursue, set on either side with Ferns, Grasses, and Heather. The distant moor is purple with the latter, richly lit up with the farewell rays of the departing sun, which, lover-like, keeps his fondest and yet saddened look for the moment of bidding his adieu.

It was on an evening like this that my husband and myself drove quietly along the road from Upper Tean to Great Yate. Never can I forget the impression its wild grandeur made upon me. It reminds one of times long, long past, when the Romans held sway in this sea-girt island of ours. It might have been untouched from their time until now, so dark are the Pine woods, so wild and uncultivated the moorland—so bleak, so primitive, so quiet does every-

thing appear. A few farms are dotted here and there; but the attempt seems to have been almost ineffectual to reduce the natural boldness and magnificence of God's first work to the so-called refined ideas of this present generation. Over the moorland still roams the black and grey rabbit; and the grouse, moorcock, and partridge still hold their evening confabulations. Here we come upon the *Triodia decumbens*, which with its purple spikelets looks so completely a Grass suited to the choice tastes of the birds which frequent these waste lands. Around us are specimens of the *Aira flexuosa*, *A. præcox*, *Nardus stricta*, several kinds of *Festuca* and *Bromus*, also the *Avena pubescens* or Downy Oat Grass. Beneath our feet is the Cowberry or red Whortleberry, of which the flower is flesh-coloured, and the berries red, acid, and rather bitter. Like the Cranberry and Bilberry, it is used in tarts, and made into preserves by the country people. It is little inferior to the former when cooked. In dense patches grows the Bilberry, with its smooth dark green leaves and bluish black fruit, which is much sought after by the children of the poor, who gather the berries for sale, making in an unfruitful season as much as 10d. per quart. Cranberries realise a larger sum, not because they are less plentiful in many parts of Staffordshire, but because, the gatherers say, they are so small and necessarily cost them more time and labour. This fruit is little used amongst the labouring classes, as being an extravagance with regard to the quantity of sugar which it requires to make it palatable. Whilst strolling amongst the Ling and Heath I may mention that a white variety of the former is found at Froghall, and I have also gathered a few sprays upon a bank at Free Hay. I have been told that the *Arbutus uva-ursi*, or Red Bearberry, is to be met with upon some of these rocky heaths, but I have unsuccessfully sought for it.

Having collected the above information with regard to the value of the relative berries which grew on the moor, we continued our ride through Great Yate, or rather sometimes driving and sometimes alighting from our dogcart, and trusting the animal thereto attached to his good sense of propriety to follow us or await our pleasure, we well scanned the banks and ditches around us. The *Anthoxanthum odoratum* had seen its best days, and was looking "seedy" and *de trop* amongst its fresh and newly clad neighbours, the *Festuca ovina*, *F. duriuscula*, and *F. pratensis*, the *Avena pubescens*, the *Lolium perenne*, *Bromus media*, and *Aira flexuosa*. Leaving the common and roadside grass, we come to the ditches between it and the moor. Here we have the *Aspidium spinulosum* with several varieties, the *Filix-mas*, *Blechnum spicant*, and last but not least the Lady Fern in its many stages of growth and characters. In some of the banks it is most luxuriant, particularly above a wet ditch at the foot of the bank where they grew, and where the fronds were of a great length.

"Where the copewood is the greenest,
Where the fountain glistens sheenest,
Where the morning dew lies longest,
There the Lady Fern grows strongest."

Proceeding on our journey we reached the small church of St. Giles, in the pleasant village of Croxden. With eager eyes I scanned the building; and there, above the battlements, most comfortably ensconced, and apparently in its luxuriance alike defying wind and weather, were several sturdy plants of the *Ruta muraria*. I took the reins, and my driver gallantly and kindly ascended to the devoted spot, and with his pocket-knife carefully detached two or three splendid bunches. I transferred it subsequently to my fernery in our little garden, but either owing to unsuitableness of soil or situation it never flourished so well as it did in its elevated home on the old church.

At a short distance from the church is the fine ruin of Croxden Abbey, where we were told the heart of King John was buried. This, however, did not interest me so much as the discovery of plants of the *Geranium lucidum*, or Shining Cranesbill. The *Parietaria officinalis* (Wall Pellitory), the *Sedum reflexum* (Crooked Stonecrop), and *S. telephium*, or Orpine, grow upon different spots of this home of the jolly old friars. Just as we were exploring the building, one of those smart and heavy summer showers which so refresh the thirsty and panting earth at this time of the year came on, and we took shelter in the dogcart under the friendly protection of the old abbey. We had time to think of the

beating hearts which once dwelt there, and made the walls echo with their prayers and masses—those hearts which now lie buried and still beneath its cloisters. Was it not a small world within itself? Were there not as many passions throbbing in those breasts as in those of the heretics without the walls? Doubtless many an earnest Christian there lies awaiting the last awakening by the Judge of All. Of whatever creed, one there standing patiently might say—

"Ashes are on my head, and on my lips
Sackcloth, and in my breast a heaviness
And weariness of life, that makes me ready
To say to the dead abbots under us,
"Make room for me!"

Then we thought of "Friar Claus," who had charge of the convent cellar, and who so gloriously revelled in its wines; of "Friars Paul" and "Cuthbert," and of the revels in the refectory; and we came to the sapient conclusion that there was as much true religion in this outer world as was fostered within those ancient walls.

The shower ceased, and the charm of our drive was increased by the coolness of the atmosphere, and the sombre tone which our thoughts had taken from our stroll about the old abbey and its tombs. The Ferns and Grasses, dried and parched when we before passed them, now gratefully bowed beneath the heavy load of wet; the birds were singing in

an under tone their evening song; and the lark, vociferating its gratitude, sank down to its bed in the heather.

"The partridges down the rusby helm
Set up their evening call;
The Roses fould their silken leaves;
The Foxglove shuts its bell;
The Honeysuckle and the Birk
Spread fragrance through the dell."

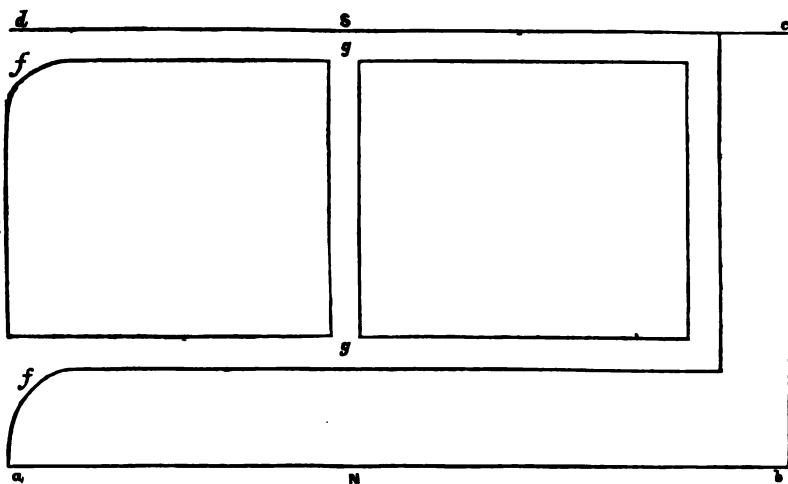
The *Digitalis* or Foxglove, which is so plentiful in this county, and which with the green fronds of the Ferns form such beautiful groups upon our banks, must not be forgotten; nor yet the *Oxalis acetosella*, the charming Wood Sorrel, with its bright green leaflets and delicately veined flowers adorning each hedgerow. The simplicity and elegance of this lovely gem, sitting in modest beauty upon its couch of moss, always reminds me of the unobtrusive yet quiet self-repose of the well-bred lady. A month or six weeks later in its birth, and almost equally graceful, the Wood Strawberry covers the same localities. Its white blossom and pendant red fruit are well known to the lovers of the beautiful as well as to the botanist. I once found a large kind of Strawberry near Leigh, with leaves as fine as the cultivated plant, and fruit equally luxuriant. I supposed it might be the *Fragaria elatior*, as it was too robust in its habit for the *F. vesca*.—ALICE.

KITCHEN GARDENING.

In writing on the above subject I feel that the first thing to be taken into consideration is the aspect of the garden and the nature of the soil; but generally speaking, when an amateur or gardener takes a place, there is the kitchen garden, and there it must remain. In nine cases out of ten the garden will be found to be very small in comparison with the wants of the establishment; but there is one advantage in a limited extent of ground, and that is, you may change the character of it by experiments that would be hopeless on a larger scale.

The generality of kitchen gardens in the suburbs of towns are mostly sufficiently sheltered by buildings or trees, but if it can be managed it is best to have the kitchen garden open to the south and south-west, as the extreme in this case, as

in all others, is to be avoided. It is very seldom that a man enjoys the rare privilege of making his kitchen garden how and where he pleases, but as it is sometimes the case, perhaps it will be best to give a rough sketch of that at present under my charge, as I consider it to be as good as any I have seen—that is, for a garden of not more than half an acre in extent. It is in the form of a parallelogram, the letters



N., E., S., W. representing the points of the compass. *a b* is a Peach-wall some 12 feet in height, and running parallel from east to west; *b c*, a low fence from north to south; *c d*, an evergreen hedge about 6 feet high; *a d* is a Yew hedge 8 feet high; *f f*, entrances from the forcing-ground; *g g*, the walks. The interior arrangements, of course, must be according to the taste or requirements of the proprietor.

Now, as to the nature of the soil. Very few are so fortunate as to possess the sort of ground most to be preferred for kitchen-garden purposes; but, on the other hand, gardening is more independent of external circumstances than

farming; or, in other words, few gardens are in such a hopeless state or on such ungrateful soil but that something may be done to fertilise and improve them. For instance: light warm soils are naturally early, and in hot dry seasons like the last too much so, yet this evil may be guarded against by the admixture of good heavy dressings of well-rotted manure every time the ground is dug, such as the bottom of the manure-heap in the farmyard, and the more moisture that can be carried on and dug in with it the better. I am well aware, and I daresay there are too many who could bear testimony, that in many instances every barrowful of manure is begrudged to the garden, and looked upon almost as a robbery of the farm or paddock; but this ought not to be the case where the gardener is expected to

have his crops as early and productive as the market gardeners, who load their land with such a variety and at the same time such enormous dressings of manure, that if the weather is at all propitious their crops must succeed. In fact, it is of the utmost importance to them that they should do so, and they are well aware that if they do not apply such fertilising elements as their experience and

judgment combined prompt them to do, they would not be so successful as many of them are. It is a well-known fact that many of them, by untiring industry and foresight, support a large family on a plot of ground that in its original state would scarcely produce enough to support a cow. I think that if this manure question were more considered the gardener would not so often be found fault with for being behind his neighbours, or he would have such materials placed at his command that he would be enabled to give satisfaction to his employer and do credit to himself.—BURNWOOD, P. D.

(To be continued.)

FIGS FALLING PREMATURELY.

A Fig tree, the White Carrington, against the back wall of a vinery, planted about four years, has had good crops during the past three years, but the Figs, after arriving at the size of a large marble, have in each year turned yellow, and eventually dropped off unmaturing. The tree is confined to its own border of 2 or 3 feet square, the soil being well mixed with broken brick and lime rubbish, and has been well watered, but all to no purpose. The same has also happened to Figs in pots.—W. H. E.

[It is not confinement of the roots that is the cause of the Figs dropping; stagnant moisture will do it, and dryness of the soil will do it, and either will tell prejudicially most when the Figs, like yours, are about half swelled. From the time Figs are the size of large Peas the soil should never be dry, and the moisture should never be stagnant. There are two ideas more: first, the Fig tree is on the back wall of a vinery, do you give it enough light? If not, the young fruit will be apt to fall, from the immaturity of the wood last season. Again: Is the tree very luxuriant? Sometimes when that is the case the very free flow of sap throws the fruit off, and we have in such a case helped them by cutting rings of bark off the shoots one-eighth of an inch in width. We think if the wood have enough light, and the roots are confined, that something in the watering may be the cause. A year or two ago we had a little pot half plunged in the soil, and most of the fruit dropped. On examining the pot we found the drainage was stopped, and the lower half of the pot was in a morass. Stagnant water at any time is their abomination.]

GLOIRE DE DIJON ROSE ON A BOURSALT STOCK.

I FEEL it a sort of duty to report to you the very successful result of an experiment tried upon a Gloire de Dijon Rose budded on a Boursault stock, the stock being a bad bloomer, although it had the advantage of a southern aspect outside a lofty old greenhouse with low windows. To turn it to ornament we planned many things, and at last resolved to bud it and treat it like a Vine, leaving the root outside and pulling the stem in. We nailed the budded branches upon the end wall inside, and the very first season had about seventy Roses from the middle of April on to May; but this second season the produce has been quite marvellous. It began to bloom in the last week of April, and in the course of ten days, or within the fortnight to about the 12th of May, we had upwards of two hundred splendid full-blown Roses from the plant. The only peculiarity in the treatment besides the Vine system was the quality of manure with which the roots were bountifully supplied—namely, a barrowful of old stuff collected from a shed in a field, the resort of horses, cows, and sheep for shelter.—AN AMATEUR ROSE-GROWER, *Belgard, Tullaght, County Dublin.*

MR. JOHN WATERER'S AMERICAN PLANTS.

THE Knap Hill plants at the Regent's Park are now at their best, and a magnificent spectacle do they present. An area of about 100 yards in length and the same in breadth, with an undulating surface and winding walks, is covered in with canvases, and planted with many hundreds of Rhododendrons and Azaleas in gorgeous bloom, and especially striking is the effect when viewed from an elevated bank which commands a view of the whole. The arrangement too is most excellent for effect, the colours being judiciously intermixed, and advantage taken of a Plane, Laburnum, and some other trees which exist in the ground, as well as of the foliage of the Rhododendrons themselves, to relieve the brilliant rose and crimson flowers by green leaves; and yellow and orange Azaleas introduced here and there serve to give a variety of form and colour which would not otherwise exist.

Among the large plants there is one of Lady Eleanor Cathcart planted on a mound—a standard having a head probably not less than 25 feet in circumference; of Roseum elegans there is one little less in size, and many more individual plants might be cited. Among scarlet and crimson-flowered varieties the finest are John Waterer,

which is very brilliant in colour, a large trusser, and one of the most useful for general purposes, Mrs. John Waterer, a very fine rosy crimson, Valasques, Admiration, Regifcum, and Giorgione. Iago is a good rosy purple, and Joseph Whitworth, a new large-flowered dark purplish lake. Among whites the best are Album grandiflorum, of which there are many fine plants, La Vivandière, Minnie, a free-blooming blush white, with a large blotch of yellow spots, and Lady Godiva. Butlerianum, white tinged with pink, is also good. To the new kinds (vol. 6, page 430)—viz., Mrs. John Penn, Lady Emily Peel, Princess Mary of Cambridge, &c., have to be added Sidney Herbert, a large bright carmine flower, Earl of Shannon, a showy dark crimson, of great substance, Consolator, and Warrior, bright scarlet crimson, and Sir Robert Peel, a brilliant rosy crimson with strongly-marked dark spots, besides which there are this year many seedlings as yet unnamed. One of these is a very striking variety, having a very pale pink or white centre, edged with the brightest rose. Another is very remarkable for the great size of its blooms. The exhibition will continue for several days, but we would advise all who intend visiting it to go at once.

FERN HABITS.

HAVING been for some years much interested in the management of a small Fern-house, some curious facts have come under my observation which, I think, may not have an uninteresting article in your Journal.

I have a plant of the Killarney Fern (*Trichomanes radicans*), growing under a glass shade in a large porous saucer, set in one not porous, with water under it, but raised so that the bottom of the porous saucer does not quite touch the top of the water. About it were put several stones, and among them a piece of brain coral, about 3 inches in diameter, which had previously been in a case with *Asplenium marinum*. At the top of the glass shade is a hole for ventilation, through which Ferns that hang in baskets above it often seed themselves. After some time the piece of brain coral became covered with young vegetation, which, about two years ago, developed into plants of *Asplenium capillus-Veneris*, *A. marinum*, and *A. trichomanes*. They grew fast, though no soil was on the coral except what might accidentally have dropped into the interstices. The *capillus-Veneris* soon became so large as to interfere with the Killarney Fern, so, last year, I moved them into a smaller case by themselves, filled the bottom of it with water, and put a large piece of perfectly clean white coral to stand in the middle of the water, like an island, with the bit of brain coral and Ferns on the top of it. Soon a slight green vegetation appeared on the lower piece of coral stretching like a cobweb from point to point; the little roots from the Ferns have gradually crept down to it, and they have completely fastened the two pieces of coral together, and are forming a soil on the lower piece, which promises shortly to be covered also with plants to the level of the water. It is a curious instance of Ferns forming a soil for themselves unassisted by anything but nature.

The Killarney Fern grew very lazily for some years till the spring of 1854, when some petrified moss was put into the case near the roots above the soil, and immediately they touched it they began to push themselves above the soil, and on to the petrified moss, and grew upon it so vigorously that it has completely filled the case, and is going to be moved into a larger one, when I intend putting the coral and Ferns into the one it is now in, with more coral and water under, but no soil, so that I can ascertain how large they will grow on the porous substance with only moisture to nourish them.—E. B.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE May meeting of this Society was held on the 1st inst., the chair being occupied, in the absence abroad of the President, by H. T. Stainton, Esq., F.L.S., Vice-President.

The Secretary read an article recently published by the Society of Arts on a new American Silkworm, or rather on the successful attempts recently made to unwind the silk from the cocoons of *Saturnia Polyphemus* in North America,

the thread of which possesses considerable lustre, and a single cocoon contains as many as 500 yards of thread. As much as seven waggonloads of the cocoons had been sent to the Technological meeting lately held at Boston, U.S.

Mr. Stevens exhibited a Shield Beetle (*Cassida* sp.), found alive in London, which had evidently escaped from a newly-opened case of Orchids, but which had unfortunately died a few hours previous to the meeting. When alive it presented a brilliant metallic appearance, which faded after death; and some discussion took place as to the insufficiency of technical descriptions made from museum specimens of such species, which were of course quite at variance with the appearance of the living insect.

Mr. Stainton exhibited a nest of hairless caterpillars of some species of Moth, found near Marlborough suspended from a Beech tree by silken threads.

Mr. F. Smith read a letter recently received from Dr. T. C. Jordan, dated Lahore, 16th March last, in which the writer announced that he had discovered that the wingless Ants of the genus *Typhlopone* of Westwood were the true workers of the species, of which the strange insects known under the generic name of *Dorylus* were the winged males. The females of these singular insects have yet to be discovered.

An extract was read from Mr. Waterton's "Wanderings in South America," from which it appeared that the larvæ of the Chigoe or *Pulex penetrans* (when hatched from the mass of eggs contained within the enormously distended body of the female), burrowed into the flesh of the toes in the vicinity of the wound caused by the entrance of the female insect into the flesh.

A discussion on the luminous powers of the winged Fireflies of the family *Lampyridæ* took place, the Rev. Hamlet Clark having observed that these insects in South America emitted their flashes simultaneously, so that there was a regular intermission of the light, the insects apparently flashing contemporaneously and in concert. Mr. Bates in the Amazons, and Mr. W. Wilson Saunders in India, had not observed any such regularity in the emission of the light, which, on the contrary, appeared to be quite irregular and independent. Mr. H. Clark also called attention to the ravages of Woodlice in a garden, where a short time ago a quantity of peat had been laid down.

Mr. Stainton read a notice of a memoir published in the new part of the "Proceedings of the Philadelphia Entomological Society," in which Mr. B. Walsh gave an account of the different species of insects found in galls upon Willow trees in North America, amongst which were as many as seven different species of Lepidopterous insects—namely, three *Tineidæ* belonging to the genus *Gelechia*, and four *Tortricidæ*, the larvæ of these Moths feeding upon the substance of the galls, although not the original makers of them. A variety of Coleoptera, Hymenoptera, and especially Diptera, of the genus *Cecidomyia*, were also found in the galls, of which there were not fewer than ten different species.

The Rev. H. Clark exhibited a collection of plant-feeding Beetles captured by M. Du Boulay in the district of Champion Bay, West Australia, among which was a remarkable Eumolpid, which has the power of leaping by means of the middle pair of legs, which are thickened. He described a number of these insects, preceded by some observations directed against descriptions of isolated species, which cause so much trouble to the student.

Mr. F. Smith read descriptions of some new exotic Hymenoptera of various families, including three species of *Paragia*, a remarkable genus of Wasps, and a new genus of Bees having antennæ clubbed like those of a Butterfly.

Mr. Bates read a paper describing four additional new species of South American Beetles belonging to the genus *Agra*, from the collection of W. Wilson Saunders, Esq.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Now is a good time to carry on a vigorous crusade against weeds, the hoe ought never to be at rest in well-cultivated gardens till they are all destroyed. *Basil* and *Marjoram* sown in beds to be thinned out to about 6 inches from plant to plant. *Beans* make another sowing, the most forward crop if not

yet done. *Broccoli*, to have the Cape varieties fine the seed to be sown where the plants are to remain, deep drills to be drawn, and two or three seeds dropped in at the distance of 2½ feet apart, slightly cover the seed, and keep watered should dry weather occur. When the young plants come up thin to one plant at the distance named. *Cabbage*, this is a good time to sow a little seed for autumn produce, any of the small sorts to be preferred for this sowing. *Cauliflowers*, plant out some of the first sowing in the open ground. A small quantity planted from two or three sowings will keep up a succession better than the small stunted plants of very early sowings. *Cucumbers*, peg down the plants on the ridges as they advance in growth, and when the hand-glass will no longer contain them set them on three bricks placed edgewise, or on crotch sticks; when they require water give it them milk-warm in the day. *Onions*, after thinning loosen the soil between the rows, and if the weather is dry give them a thorough watering. The thinnings of the beds may be planted out, but must, if the weather prove dry, be watered every evening until they take fresh root-hold. This must be carefully attended to, as the roots will be very near the surface. *Peas*, the last sowing of Knight's Dwarf Marrow should now be made, as it is longer in coming into bearing than any other. Continue to earth up and stick the advancing crops. If the pods of the early crops do not fill well give a good root-soaking, which will be sufficient for them while they last. *Radishes*, make another sowing of the various sorts to succeed those sown in the middle of last month. *Savoy*s, plant out some of the early sowing. The dwarf sorts may be planted about 1½ foot apart in the row, the rows to be 2 feet from each other; the larger sorts should be 2 feet in the row, and the rows 2½ feet apart. *Tomatoes*, as they are usually planted under a south wall, where they receive but little benefit from a passing shower, they should be occasionally watered, and kept mulched with short litter. Nail and stop the shoots as they advance in growth. Continue to thin the crops while they are small.

FRUIT GARDEN.

The ravages of caterpillars upon Apple trees about the suburbs of London are truly awful. Among the practices adopted by gardeners of the old school was making a fire to the windward of the orchard, and allowing the smoke to circulate in clouds amongst the trees. Although we were inclined in our younger days to smile at the idea, nevertheless we have lately adopted the practice, and can strongly recommend it, as thousands upon thousands of caterpillars have been dislodged from the trees and fallen to the ground suffocated by the smoke and heat. The shoots of Cherry trees infested with the black fly should be dipped in tobacco water immediately the pest is detected.

FLOWER GARDEN.

The newly-planted things will require constant watching, as under the best management failures will sometimes occur; these should be made good, and the tying and staking of everything requiring support should on no account be delayed. Where an immediate display is not wanted, the buds may be pinched off for a week or two to encourage the plants to cover the ground. Creepers against walls and trellises should be constantly gone over to tie or nail them in. Standard and pillar Roses should likewise be looked over to see that they are properly secured to their stakes. Take every means to eradicate all the broad-leaved plants and coarse-growing grasses from the lawn, which they much disfigure, and keep it closely cut with the scythe or machine. Strong shoots of *Chrysanthemums* may soon be layered to produce dwarf compact bushes. Take the first opportunity after a shower of rolling and regulating walks. *Hollyhocks* should now be staked, tied, and attended to as they advance in growth. Be sure that plants growing in vases, baskets, &c., are properly attended to and thoroughly watered in the evenings of hot days. The *rosarium* should likewise have all the attention that can be spared at this busy season; remove all suckers, and keep a sharp look out after insects. The Rose has many enemies, from the earwig to the aphid, use all means at hand to destroy these; though nothing comes up to hand-picking for the destruction of grubs and beetles, it is a tiresome method, yet it is the only one to which recourse can be had with permanent advantage.

GREENHOUSE AND CONSERVATORY.

Hardenbergias, *Kennedys*, &c., may be slightly cut back after blooming to induce a new growth. Water to be given liberally to plants in the border of the conservatory, excepting, perhaps, plants very recently planted; shade daily when necessary, and give air in proportion to the state of the external atmosphere. The stock of *Balsams* and other annuals grown for filling the vacant places in the greenhouse, &c., should be encouraged by frequent shifts, keep them in bottom heat and near the glass; pick off the early-formed bloom-buds, as the plants should attain a considerable size before being allowed to bloom. Continue to train *Kalosanthes* neatly, and water occasionally with liquid manure. Specimen *Scarlet Geraniums* should likewise have liberal encouragement to grow them on. Common and Fancy *Pelargoniums*, for late bloom, will thrive better in a somewhat shady situation. *Fuchsias*, if not in their blooming pots, should be potted forthwith. Train in the desired form, and pinch back weak and straggling shoots. The glass to be taken off *Japan Lilies*, *Gladioli*, &c., unless very early blooms are desired. Keep a portion in the shade of a north wall for a succession of bloom. The principal part of the greenhouse plants may now be safely taken out of doors. Select a shady situation open to the east and protected from high winds. Take care that the plants stand on a bottom carefully prepared to exclude worms from the pots.

STOVE.

Continue to shift all such plants as require it. This is a good time to pot *Peristeria*, *Phajus*, *Cymbidium*, and all other *Orchids* that are starting into growth. The best time for shifting *Saccolabiums*, *Vandas*, *Camarotis*, *Arides*, and all plants of similar habit, is as soon as they have done blooming. In giving them new baskets, afford plenty of room and good open material to grow in.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE chief work has been trenching Broccoli ground for Peas, Turnips, late Carrots, Dwarf Kidney Beans, &c, the latter requiring rich soil to produce heavy succulent crops. Watered Cauliflowers, and staked successional Peas. We have now no doubt that our early Sebastopol Pea, which has done us good service, is identical with Dillistone's Early, about the earliest we have met with, but no great bearer. Cleared off our Tom Thumbs from orchard-house, where they proved themselves useful. Took up a bank of Scotch Cabbaging Kale, which was just running to bloom, as Cabbages were plentiful. To avoid the trouble of wheeling out, and as we are scarce of manure, will trench them into the soil. This may always be done with all sorts of large weeds except seed weeds, which should never be buried in the ground. In fact, it is bad policy and in opposition to all economies ever to allow a weed to arrive at the seeding state. When cut up when an inch in height, the sun does all that is then necessary for their destruction. Groundsel cut up when knotting for bloom in dull weather, contains enough of moist nourishment in it to perfect and sow its seeds. It never can be got rid of in a garden, if it is allowed to arrive at the seeding state. The other Sunday we noticed in a cottage garden, untenanted, one huge heavy crop of Groundsel just seeding. Self-interest should have led neighbouring cottagers to clear, and clean, and crop the garden, if they had been permitted, as the seeds will be sure to be wafted to their ground. In the garden itself the seeds will be so numerous that twenty years will scarcely see the last of the produce of this year's seeding. The Dutch hoe is the best tool for all places where it can be used. Cut up the weeds before they become large, and let the sun dispose of them. Where nicety is required the hoe may be pulled backwards to make all smooth. A rake for such purposes is worse than useless. The raking of weeds always shows bad management, or deficiency of labour power, and the very act of raking increases the evil, from the time it occupies. As for flower-beds, we would as soon see a donkey trampling among them as a rake. It used to be the fashion to rake flower-beds as level and pretty well as hard as a piece of pavement. We would rather have them loose, and then a back stroke with the rake can do

everything in the way of neatness. Thinned most of our Onions, Carrots, Parsnips, &c., which have come up very thick, and sowed Salsafy and Scorzonera to prevent it running. Sowed more of Dwarf Kidney Beans, and the last of Broad Beans, as they seldom do much good if sown later. Watered Cauliflower with sewage water, and earthed-up some later Potatoes. The Ash-leaved that were protected at first with glass have done very well. Taken all-in-all, we find nothing, that for early purposes, beats the Ash-leaved. In limited room out of doors, the small tops are a great recommendation.

FRUIT GARDEN.

For want of time we have not yet turned out many of our forced *Strawberries*, but will do so as soon as possible, and would like to give a good watering to those out of doors, and then cover the spaces between with long litter from the stables. Clean straw, where it can be obtained, is best; but a good shower of rain will render the litter clean before the *Strawberries* are ripe. Long grass is also good, as it becomes hay before the *Strawberries* rest upon it. Short grass, also, is not to be despised where nothing else can be had; but it brings lots of weeds, and in heavy rains it is knocked into the interstices of the fruit. All sorts of tiles are apt, from scorching, to do as much harm as good. Where none of the above coverings can be easily obtained, no better plan can be adopted than running a string on each side of the row, supported by stout little rough sticks. We saw some fine *Strawberries* last year so dirtied and smeared that they had to be washed before using them. What a fine taste they must have had. It would have shown more of the "vaunted-gentee" to have made no attempt at *Strawberries*, instead of breaking down at the point of protecting them from soil and mud. We are now thinning them out of houses and pits, and as yet we have not been troubled with spider, or anything else. Early in the season we saw some green fly on a few flower-stalks, but the finger and thumb did for them, and we have seen none since. We have more faith in a quick eye and nimble fingers than in all washings and smokings put together. If this should catch the eye of Mr. Donaldson, we should like to hear how his very strong plants succeeded last season. Some half a dozen of failures, we have no doubt, were owing to luxuriant growth, late potting, and large pots. He seemed to be taking extra care that his plants should be well matured, and of course that secured, extra strength should yield extra crops.

Went over Apricots and Peaches out of doors, thinning shoots and fruit, and giving them a good lashing with clear soot water from the garden engine, as much in precaution as otherwise. The nice rain alluded to last week broke huge boughs from forest trees, and also broke down Gooseberry and Currant bushes heavily laden. Some that had four stakes and rough wooden hoop round them were safe enough. We never knew rain hang so heavily on trees for such a short continuance. The high winds of Monday also did damage to trees and bushes. *Strawberries* in the orchard-house are swelling fast. Will top-dress with horse-droppings and soil the fruit trees in pots, as that will not only give nourishment, but will also, as mulching, save waterings. We did not care about doing this sooner, as we wished the soil in the pots to be well heated. Sent thinnings of fruit of Peaches for tarts. Can find no use of that kind for the extra supply of Nectarines. When bruised and soaked in hot water they make a strong tea that no insects like, and when used fresh the scent is very pleasant, but very unpleasant when kept for several days. Tied-in shoots against wall, and kept nipping, with the finger and thumb, the points of shoots of trees in pots. Caterpillars have needed hunting after, especially on Plums. They show where they nestle by the rolled-up leaf. Nothing but crushing will destroy these pests, as the curled-up leaf defends them from all attack, and what would make the leaves unpalatable would also be apt to injure them. Noticed one Cherry tree with scalded and blotched leaves, owing to scars in the glass, and daubed a little paint on the spots. They were rubbed over with soft putty last season, but it had come away, and hence the burning. Three years ago the bottom of a tree was thus blotched day after day, and at last we discovered a scar not larger than the lines of ordinary writing, but it did all the mischief. We advised a lady lately, who had been recommended to have 1½ a-foot

glass for an orchard-house, not to grudge a few shillings more for 100 feet. The cheaper the glass the more likely, as a rule, will you be to have spots, that will concentrate the sun's rays, and scorch and burn. We hope we shall learn much more on the glass question.

We may here broadly notice a simple fact, that in connection with ventilation some people with orchard-houses seem slow to comprehend. Have a short span-roofed house—say from 40 to 60 feet, with ventilation at the apex at each end, and ventilation at each side, and you need not trouble much about ventilation at the roof. For a late house, and a long length, you need not trouble at all. Have a lean-to house against a wall and no top ventilation, and we would not augur much for success in anything except breeding red spider enough to supply a stock for a continent. In the span-roof, with ventilation at each side, the heated air will not accumulate much at the apex, as this thorough current prevents all that. Mr. Rivers thoroughly understands all this. But in a lean-to, without ventilation at the apex, there is no regular current, and the hottest and moistest air will be found at the narrow apex of the roof. For a small house some 20 feet in length, air at the ends under the apex would be sufficient; but for 30 feet we would require two openings in the middle as well. For a long house of from 60 to 100 feet, every other square should open, so as to give from 9 to 12 inches all the way. Two ideas more—early air-giving is even more important than the quantity. We have known houses spoilt because they were shut until nine o'clock on a sunny morning. And, again: even as to air there may be too much of a good thing, and large openings in front to admit cold frosty air will do more harm than good. A gentleman lately told us that a great practitioner seemed to throw all his ventilators open without ceremony even in cold weather. That we presume would be when the trees were in a condition that they could not suffer. We know for a fact that the same cultivator hangs thick woollen netting over the ventilating openings in severe weather, to moderate the force of the cold air, and to secure its being mollified before reaching the trees when in a tender state. Nothing is more important than air-giving to everything under glass, and few things are more neglected, or become mere work of routine. In our boyish days we have seen a man leave his breakfast more than once to add to, or reduce air. Now too often the air given in the morning remains unchanged until it is taken away at night. There is a medium between the two extremes, and the thermometers and the clouds should be closely watched to prevent all sudden changes. Some time ago we directed particular attention to this subject.

ORNAMENTAL DEPARTMENT.

Besides tying and potting lots of plants for summer and autumn, and watering more freely than we would wish for our supply of water, the chief work has been rolling, mowing, and machining lawn, and getting out lots of bedding plants. The weather on the whole has been dry for such work, and the wind on Monday the 29th was very trying to fresh-planted things; but the first-turned-out are now taking hold and will look after themselves. We do not care about moving the surface much after planting as yet, in order that the ground may become warm, and then the rooting process will proceed more rapidly. We have stirred the ground among *Calceolarias*, and as soon as possible we shall mulch them.—R. F.

LILIUM AURATUM.—Mr. Stevens announces a sale of established plants of the charming *Lilium auratum*, on Tuesday next, the 13th inst. We believe that upwards of fifty of them are expected to be in bloom on the day of sale, a circumstance which will render the well-known auction-room unusually attractive, and quite a flower show on the occasion.

COVENT GARDEN MARKET.—JUNE 3.

The market continues to be abundantly supplied with all kinds of produce in season. Pines are sufficient for the demand and very good; Grapes, *Kew*, are plentiful and good. Peaches and Nectarines have improved in quantity and quality, and a few Strawberries from the open ground have made their appearance. Peas are now brought in large quantities, and sell at about 5s. per bushel. Of Cucumbers there are large importations from Holland. New Potatoes from Friesland are to be had of excellent quality, at from 2s. to 4s. per bushel.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....½ sieve	2	0	4	0	Mulberries punnet	0	0	0	0
Apricots, Green, pottle	1	0	0	0	Nectarines doz.	12	0	24	0
Cherries lb.	1	0	3	0	Oranges.....100	6	0	14	0
Chestnuts bush.	14	0	20	0	Peaches.....doz.	18	0	36	0
Filberts 100lb.	0	0	0	0	Pears (kitchen) doz.	2	0	3	0
Cobs do.	50	0	60	0	Pears doz.	0	0	0	0
Gooseberries...½ sieve	2	0	3	0	Pine Apples.....lb.	6	0	12	0
Grapes lb.	5	0	10	0	Plums ½ sieve	0	0	0	0
Lemons.....100	5	0	10	0	Strawberries lb.	3	0	10	0
Melons each	8	0	12	0	Walnuts.....bush.	14	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes each	0	4	0	6	Leeks..... bunch	0	3	0	6
Asparagus bundle	3	6	0	0	Lettuce.....per score	1	0	2	0
Beans Broad.....½ sieve	0	0	0	0	Mushrooms pottle	1	0	2	6
Kidney.....100	1	0	1	6	Musht. & Cress, punnet	0	2	0	0
Beet, Red..... doz.	3	0	4	0	Onions bushel	5	0	7	0
Broccoli bundle	2	0	3	0	Pickling quart	0	6	0	8
Brussels Sprouts ½ sieve	0	0	0	0	Parsley ½ sieve	1	0	1	6
Cabbage doz.	1	0	2	0	Parsnips doz.	1	0	2	0
Capoteums.....100	0	0	0	0	Peas..... quart	1	0	2	0
Carrots bunch	0	7	0	10	Potatoes bushel	2	6	4	0
Gauliflower doz.	4	0	0	0	Radishes doz. bunches	0	6	1	0
Celery bundle	2	0	3	0	Rhubarb bundle	0	2	0	4
Cucumbers each	0	6	1	6	Savoy doz.	0	0	0	0
Endive score	2	6	3	0	Sea-kale basket	0	0	0	0
Fennel bunch	0	3	0	0	Spinach..... bushel	1	0	2	0
Garlic and Shallots, lb.	0	8	0	0	Tomatoes..... doz.	6	0	0	0
Herbs bunch	0	3	0	0	Turnip bunch	0	3	0	0
Horseradish ... bundle	2	6	4	0	Vegetable Marrows doz.	0	0	0	0

TO CORRESPONDENTS.

SEEDLING PANSIES (L. F. F.).—Many of your seedlings are showy flowers, but too coarse and rough. The petals want substance. They are not equal to the *Pansies* of the present day. The very dark one was a promising flower, as well as that with a white ground and dark violet centre.

DEVONIAN ROSE.—We have received from Mr. S. J. Pavitt, Rose Cottage, Bathwick, Bath, some trusses of this Rose worked last May. They are about the most vigorous, highly-perfumed specimens that ever came under our notice.

ANTS (A Voice from the Glen).—You are quite mistaken in concluding that ants destroy bulbs and fibrous roots. They may be driven away by watering their haunts with the ammoniacal liquor from gas works.

BOTANICAL WORK (J. E. D.).—Withering's "Arrangement of British Plants" contains all you mention, but, of course, does not include exotics. The seventh edition, in four volumes, is the best.

INSECTS (Rev. G. T.).—We believe the caterpillars which have gnawed the young Peaches are those of the Moth *Graphophora festiva*, and that it is an exceptional circumstance for them to attack this fruit, as the *Primrose* is their ordinary food.—W.

EARLY PEAS.—Messrs. Carter & Co. have written to us as follows:—"Herewith we send you a dish each of Sutton's Ringleader and Carter's First Crop Peas, both sown side by side, and on the same day, early in January last, at our St. Olyth Seed Farm. You will observe that our First Crop Peas are fully matured, and we wish to state that we picked the first gathering on Monday, the 15th inst. We may also remark that it is the opinion of those who have seen them growing side by side at St. Olyth, that Carter's First Crop Peas are longer in the pod than Sutton's Ringleader, and consequently more prolific. You will, to a certain extent, be able to corroborate this by the samples sent, both of which we pledge ourselves to be true samples according to our trial. In conclusion we feel called upon to state, in justice to ourselves, that Carter's First Crop Pea is not two days later than Sutton's Ringleader, as mentioned in your columns, but, on the contrary, rather more forward in podding."

PROPAGATING AZALEA PONTICA (Cisse).—The Ghent or hardy *Azaleas* are most readily propagated by layers, making choice of those shoots that rise from the base of the plant. Autumn is a good time to layer them, making an incision or cut upwards half through the shoot, and fastening the latter with a peg securely an inch or so within the soil. They may also be raised from seed. We do not know that they can be profitably (privately or for sale), propagated from cuttings. We tried some in that way, but were not pleased with the result. Any of our correspondents who have raised them from cuttings will oblige us by their experience.

GRAFTING RHODODENDRONS (J. W. B.).—These are grafted like Apples and Pears, and just when the sap rises in the stock. That kind of grafting known as tongue or whip grafting is the best, inserting the graft low, so that it can be covered with soil. The reason for grafting in April and May, and if the stock be in advance of the graft all the better. We are not aware that they are ever budded.

PELARGONIUMS (C. M.).—The varieties of *Pelargoniums* are so numerous, and many differ so slightly from others, that we cannot venture to identify the single flowers you enclosed.

ASPHODELA (J. C. Beale).—There are so many *Asphodels* that it is impossible to surmise what those you have purchased from the vagrant French dealers may be; but we regret to add that it is almost a certainty that you have been cheated. We know many instances in which these foreign dealers have hired a shop for a week in a country town, and sold flowers of impossible colours, and trees to yield fabulous fruits, to the too credulous.

OPENING AN ICE-HOUSE (A. K.).—The time of day for opening an ice-house with the least danger of melting the ice, we should say, is early in the morning; but practically it is of no great consequence if it is not kept long open.

HEDGE-PLANTING NOW BEHIND PALINGS (A Subscriber).—Rooted plants of Privet would do if well watered. Slips would do little good, but they might keep alive, and root in the autumn.

DOUBLE BULBS IN VAN THOL TULIPS (*A Subscriber, Jingo*).—We have little doubt but that the bulbs had been planted too deeply, and too richly treated. The small bulbs growing had better be treated in a reserve-bed for another season. We should not expect many to bloom well.

BORDER UNDER NORTH WALL (*B. B.*).—Good-sized Scarlet Geraniums and Calceolarias would do very well in such a border. To have something out of the common way, Cinerarias, and the herbaceous Calceolarias, would bloom well in such a border all the summer, when they would be done flowering in a greenhouse, or in places more exposed to the sun. We once had a splendid show of such on a north border all the summer. All the heartsease tribe would do well there all the summer, with rich nourishment.

FIGS (*C. P.*).—The Figs are not diseased. Our impression is that the plants get dry at one time, and are soaked with water at another, and the Figs with dryish roots have been caught by the sun whilst the fruit was in a damp state, and the scalding has produced a rusty appearance. Probably the fruit that are so affected will not swell. Plenty of air early would prevent it, with judicious watering.

PEACH LEAVES FALLING (*F. H. Law*).—There is a trace of white red spider on the leaves—that is, spider too young to be red; and the remedy is plenty of the syringe, especially late in the afternoon. The chief cause of the spots on your leaves is the sun shining on them before air has been given freely in your orchard-house, or some spots in your glass. We have a little Cherry tree all spotted the same way, from two rough scars in the glass, which we had putted the year previously. We drew the end of a small paint brush over the blister and scar in the glass, and there has been no more blotching and burning. Some of the cheap glass is well supplied with these little scars and blisters, and each is apt to act as a concentrating burning glass. We think this will prove your chief remedy. A little paint, or glue, or putty rubbed over such places will avert the danger.

WEEDS IN PAVED YARD—FUMIGATING (*A Beginner*).—The best thing for destroying grass between stones in a yard is to sow the space over with salt, so as to make all white, and brush it among the stones; but it will not be safe to sow it within 4 feet of any building. No substitute is better than tobacco smoke; there is tobacco water. For a cleanly wash nothing is better or simpler than quassia water. The strength has often been given. Azaleas are easily propagated by cuttings.

GERANIUMS ILL-MANAGED (*Ignoramus*).—We are afraid that your cutting down late in autumn, and repotting them in vegetable mould, which you found in the Willow tree, has pretty well done for your plants, and you had better obtain a fresh stock for your windows. If you had merely pruned your Fuchsias a little in autumn, and left them alone in winter, and fresh potted them as soon as fresh growth took place in the spring, all might have been well. The same as to the Geraniums, if you cut down after the beginning of September. To make the most of your *proteges* now, we would advise shaking the sour Willow soil from them, washing the roots, and then placing them in much smaller pots, in light sandy loam, and shading a little until they are rooting freely. We mean such loam as you could obtain by the side of the road, with a quarter of rough sand with it. You could give richer nutriment afterwards.

MULCHING CALCEOLARIAS (*F. T. C.*).—If your Calceolarias are growing freely, and the ground is moist, you may mulch them at once with rotten dung. If they are not large, and the ground is still cool, and not so moist as you wish, you may delay for a fortnight. We would do our own at once; we could command the material. We publish a full index for each volume; therefore the weekly index is only of importance for that week.

ADKLANDER ALBIVENTRIS LEAVES SPOTTED (*Bingley*).—There are spots on the leaf as if scale had been resting on it, but none on it now. If so they must be washed off with soap and water, and then well syringed with clean water. There are other marks that denote scalding, and the remedy is to give air early, so as to have the leaves dry before the sun reaches them.

CROP OF GREENSAGES IN POTS (*C. P.*).—From two to three dozen of Plants will be sufficient on a tree if you wish them fine, and not to injure the trees for another year.

BROWN TURKEY FIGS FALLING (*Idem*).—We are surprised that your Brown Turkey sheds its fruit, whilst the White Marselles stands so well, as it forces quite as well as the White Marselles generally. The best of the latter is Rivers's variety, and that does well with or without heat. Are you sure you have the Brown Turkey? With plenty of water, and yet no stagnant water, no Fig stands better than the Brown Turkey. We have seen several fine trees throw their fruit from being too dry when swelling.

SHELVES IN A HOTHOUSE (*A Humble and Constant Reader*).—We have no doubt what you propose will answer; but our opinion is that, for a span-roofed house 16 feet wide, the best plan is to have a stand in the middle, and a walk and broad shelf at each side. All the plants could then be easily reached, but that would do away with your one central path. In looking more closely over your letter we are in doubt if your houses are span-roofed; for, as to the second house, you speak of the back wall, and the expediency of having plants against it, and having a pit in the middle. Well, not to interfere with your pit, you could have a narrow border in front of your back wall, if it is a lean-to house, a walk between the border and the front, and in the pit you might shut off some pieces 2½ feet square for creepers for the roof; but if you take our advice you would make the curb of your pit level all round; and in such a house we would not have the shelf more than 2½ feet or 2½ feet above the level of the pathway. This will enable the observer to see all the plants from either pathway. You can fill your pit with plunging material, or you can use rough stones, and then fine gravel, for setting the plants on. As to slate or gravel, or small washed pebbles, both are very good. Slate is very good, with an edging to hold water; and it is also very good covered with clean gravel to let in a little moisture. Your creepers and Vines ought to be 15 inches from the glass. If in the third house, which you mean for an early vinery, and to force Vines, a pit in front would be more useful than a stage. In the house for bedding plants every place may be supplied with shelves, and then, in the dark months, many things will stand on the floor. In such a house we have frequently something like three tiers of plants; but then they must be managed according to what they want. Of course the plants would do better in three houses, and give less trouble than so much storing and moving; and we would all like to do so if we could; but many are situated as we are—turn out many thousands of plants every year, and by the first week in June it would not be easy for a stranger to say where such myriads of plants came from.

NAMES OF PLANTS (*Gensing Lodge*).—1, *Phlebodium aureum*; 2, *Cyrtomium falcatum*; 3, *Asplenium lucidum*. (*J. F., Coventry*)—1, *Asplenium Adiantum-nigrum*; 2, too little developed; 3, *Polypodium Dryopteris*; 4, *Polystichum angulare*. (*M. D.*)—It is *Allium Moly*, Yellow Garlic or Moly. It is quite hardy. (*A. M. H.*)—1, *Pteris tremula*; 2, *Polystichum capense*. We cannot undertake to name varieties of the *Pelargonium* from single flowers. (*C. F.*)—*Rhododendron javanicum*; *Erica ventricosa* superba. (*An Old Subscriber*).—*Lonicera hispidula*, and the young shoot sent without flower is probably a species of *Spiraea*. (*Leighton*).—*Hedysarum coronarium*. (*T. J.*)—The large-flowered *Myosotis* is *M. alpestris*, and the other is probably a variety of *M. arvensis*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending June 3rd.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun. 24	29.943	29.834	74	48	62	59	S.	.00	Densely clouded; very fine; overcast and warm at night.
Mon. 29	29.925	29.672	71	44	62	59½	S.	.00	Overcast; warm south wind; cloudy and fine (winds; o'cast
Tues. 30	29.902	29.714	69	40	62	59	S.W.	.00	Cloudy and fine; bolsters; low white clouds; whirling
Wed. 31	29.893	29.858	71	41	62	59	S.W.	.00	Lightly overcast and fine; very fine; cloudy; overcast at
Thurs. 1	29.858	29.730	68	50	61½	59	E.	.76	Fine; overcast; rain; showers, heavy rain at night. (night,
Friday 2	29.615	29.577	66	48	61	58½	S.W.	.19	Densely overcast; slight rain; overcast; rain at night.
Sat. 3	30.071	29.773	74	42	60½	58½	S.W.	.02	Uniformly overcast; slight rain; fine; very fine; cloudy.
Mean	29.887	29.787	70.43	44.71	61.57	58.98	.....	0.97	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

EFFECTS OF COLD SPRING WEATHER— BONING FOWLS.

"The wind of late breathed gently forth—
Now shifted east, and east by north;
And Destiny, which sometimes wears
An aspect stern on man's affairs,
Not altogether smiled on theirs."

Too true! bitter cold nights—colder mornings! Chickens looking for shelter. Some that had gone well through the tertian snowstorms of the winter months, and in the fine weather of a fortnight ago grew while you looked at them, these have begun to give up. Cold wind, cold rain, and no sun, all within thirty-five days of the longest day, when (the idea is like going into an ice well) the days will be drawing in. We went once with a very close observer to see an

execution. It was at the Old Bailey, and our friend said, "Do not look at the scaffold, it is horrible, but turn your back to it, and watch the women at those windows." It was the house looking up Giltspur Street. "Which shall we look at," said we? "The maid servants at the upper window, they are the most unsophisticated and impressionable." They were cheerful and almost merry till the clock was on the stroke of eight, then they became quiet and their mouths were set. Then they grasped each other (there were four of them), their brows were knitted, and while a visible shudder passed over them, each closed her eyes for an instant. 'Twas but an instant, and we were then borne along by the crowd, which hurries away the moment it is over. The features of the girls told all the history, and just so, we fancy, our man looks out for us in the morning. Our bedroom window looks out on the chickens. We like to see them stretching all over the field, finding food among the dewy grass, chasing unwary flies, taking stock of an adventurous frog, or drawing an incautious worm out of the

earth as tenderly as Old Izaak impaled a frog on his hook. They seldom break the worm, and if they do we don't believe it feels it. It is a rare sign of health when they take to these diversions, and seek all this kind of food, and our man passes along in front whistling merrily. He has a knack of addressing an imaginary person: sometimes he calls him "Jim," sometimes he speaks through the hedge; but it is curious that his conversation is always where we can hear it, and we never hear an answer. In the fine weather we heard, "I say, Jim, they chickens do grow, I never see things do so well in my life, and they eats next to nothing, and yet see how they thrive." But for the last ten days he is perpetually in conversation with the poultry Mrs. Harris. He was looking a day or two hard at a hedge within a few yards of our window, and thus he discoursed, "Ah! you may say that, and you ain't the only person as wonders, I wonders myself that I have patience with them. Three hens off yesterday, all clear eggs, not a chicken. Chickens don't grow a bit, and what they eat is marvellous—in fact, I'll tell you what it is, they terrify me." While peering cautiously at him from the chamber window we can tell the quarter of the wind and the condition of the chickens, as well from his countenance as we could tell the progress of the execution from watching the faces of the girls. When we come down we have a repetition of what Master So-and-so or Dame This-and-that said as they were going to work. We are afraid we are like "Old Joe Bagstock," getting sly. We have learned to parry all these attacks by mildly saying, "We have heard you are not so well off as your neighbours." "Then them as says so knows nothing about it. I have ten chickens to their one. Look here, sir, come this way, sir, there's a brood you have not seen, but this weather is very bad." So it is. We have found great benefit from putting camphor in all their water. We have resumed our winter feeding, and although they will pull through if we have no more snow, we fear most of them will show they have had a bad fortnight in their lives.

We had written thus far when we ourselves suffered as much as the chicks. Bad cold, pain at the chest, nasty little cough—camphor for ever! We make a "cigarette camphrée à la Raspail." Take a sound goose quill, cut it off at the feather, stop the end with some paper, break up some camphor in small pieces, fill two-thirds of the quill, and stop up again with paper. If you are plagued with a "nasty little hacketting cough" keep this cigar in your mouth, inhale air only through it, you will find your tiresome symptoms disappear—Raspail loquitur, "*comme par enchantement*."

It is said that a friend about to visit England, asked Voltaire, "if he had any commissions for that country." "No," said the poor old infidel; "Yet, stay; should your friend see the sun, ask him to present my compliments to him, I was there forty days, and did not see him once." We shut ourselves up according to medical directions, and in twenty-four hours the sun was shining, and people were complaining of the heat. "Jim," shouted our man, "this ere's a morning. There, I do think, them chickens is growed since last night. Lor' a' massy, it does one good. How that grass is growed *surely*. If the chickens did not grow as fast they'd be lost in it. Morning, missis, morning, you be right, 'tis a pleasure to see things, they grows while you looks at 'em. Terrible hot yesterday to be sure, but chickens thrives, and it's a pleasure to look after them."

He waits no more for us to come down, we are obliged to seek him. We know him first by his whistle (he is musical). During the bad weather he has a weakness for the "Dead March in Saul." When he arrives at a bad case, or when he is overcome by the appearance of things in general, he lets loose his drums, big and little; cymbals, wind instruments, all go at a crash. The fit lasts a minute or two, he then capiously pushes his hat on one side, and scratches his head. The last operation restores him. The "Maestro" vanishes into thin air, and the poultry man returns. But when the weather is favourable and chickens do well, nothing less cheerful than "Cheer, Boys, Cheer," will answer his turn, and we believe when we are in search of him, he dodges; for 'he sounds meet us everywhere, but the man seems as though he had found fern seed, or the four-leaved clover.

'What are we to do with those two young cocks, they've

all day, and they'll never sit up?" "Kill them, and take them in-doors." "They be skeletons." "Do as you are told."

"Sarah," says cook to the parlour-maid, "I wish you'd tell mistress I wish to speak to her." "Well, cook," says mistress, "what do you want?" "Why, look here, Fred has brought these two things in, he says they're to go into the larder, they shan't go into mine. Nasty, long-legged, ill-looking things, I don't believe as master told him." "Well, well, well," says the mistress, "don't make troubles." (We think in these days the mistress has it hot and strong sometimes). "I will see your master and ask him." The "first blow may be half the battle," but some people think much of the last word, and cook said, "She only know'd one thing, she wasn't going to dress such fowls, no, not if she gev warning as she stood there, and she didn't care."

What on earth had Fred said?

Cook may give warning and leave, but master cannot, so he was brought into the kitchen to say what was to be done with these unfortunate fowls. Poor man, he was in great trouble, he is not a bad husband as things go; but it is said, that now-a-days it is easier to get four wives than one cook. He knew not what to do. When you *must* bathe, and don't know the depth of the water, take a header. He did so, "They are for made dishes." "There, cook," said mistress. Indeed, sir," said cook. "Well, mem," said cook, "praps you will say what made dishes you wish." Mistress looked to master, and he said, "Galantines." Cook knew nothing of such outlandish things, but she didn't mind learning, if mistress would teach her. She did so as follows:—Now, cook, take that fowl's neck just below the crop, squeeze the skin between the thumb and finger till it is tight; now draw your sharp knife down the back of the neck. There, it gapes open. Now, cut off the neck, between the shoulders, do not cut through, but withdraw the severed part of the neck 3 inches below the shoulder. Now, cut through everything so as to divide the head and neck from the body. Remove the crop. I think, now, for the first one or two operations, mistress or master must superintend. The head and neck are cut off, the crop is removed. Place the fowl on its *sant* on the table. Take the outer skin and fold it over backwards all round; the prominent objects will then be the merrythought and the two wings. Scrape the merrythought clean and remove it. Then with a sharp knife disarticulate the wings. Let us digress, boning requires a very sharp knife, and clumsy tyros mangle themselves in the beginning, but only clumsy fellows. If you keep the edge of the knife against the bone, and that is where it should be there is no danger. Cut through the wing bones; having done so and removed the merrythought, you will again turn all the skin backwards, and then the leg-joints will appear in view on either side. Strip the skin back over them and divide where the drumstick joins the good succulent thigh, you may pass your knife through below the joint and cut upwards. Now, turn over, scrape out the oyster-pieces, and all the meat of the back. Keep the edge of your knife inwards, and all will go smoothly till the drumsticks are in the way, denude them of all flesh, and having done so, strike the bone a sharp blow with the back of your knife just below the knee-joint, it will easily break. Remove all the splinters of bone. You can then take the bone out of the pinion of the wing, and take all the meat that belongs to the carcass or thighs, or any other part. Continue to turn the flesh and skin backwards, and to keep the edge of your knife towards the bone. When nothing remains to cut, you have boned a fowl. Turn the skin back and look at the carcass, you will find that which has seemed almost a miracle, is the common-place feat you have just performed.

If it stopped here, we should argue with cook, there was nothing to brag about. But we bought two sheep's tongues and boiled them, and we chopped up 4 or 5 lbs. of refuse pork, and we carefully saved the gizzards and livers of the fowls, and we looked for all the scraps we could find till we had a basinful. Then we took the carcass of this long lean chicken and subjected it to a Falstaffian process. We once knew of a country performance where the lean apothecary of Romeo was the Falstaff of Henry IV. Pillows and stuffing my merrie masters. When we laid the Cochon carcasses guiltless of bones, they did look flat. A flounder was rotund compared with them. "I wo'n't march through

y with them, that's flat!" "Give me the stuffing." I put some chopped pork, till the bottom was square; I took a whole sheep's or calf's tongue, we cannot say and put that in whole, having first removed cartilage that was uneatable, and then we topped up (sic) with all that came to hand, till our Cochon brother's was full, and then we tied him up in a cloth and allowed "mijoter au coin de feu," for four or five hours or ad then took him out and put him in a cold larder, breakfast time, all said, as they should say, "Success journal," and the children ate till ma would allow no nd pa said it would be good for a hunting breakfast; he said it was good enough for a bishop at a visi- and cook said she had learned something; and Fred was only joking; and the two last married and lived mistress; and cook used to make a galantine when- was wanted.

HANTS AGRICULTURAL ASSOCIATION POULTRY SHOW.

The meeting held at Winchester on the 1st inst. the g prizes were awarded:—

G.—First, W. R. Peacey, Chilworth, Tetbury. Second, J. K.ylesbury.

—First, Miss J. Milward, Bristol. Second, J. K. Fowler, Ayles-

—First, H. Bertram, Newport, Isle of Wight. Second, S. Dupe, th, Bath.

—First, Mrs. Pettatt, Ashe. Second, T. P. Edwards, Lyndhurst.

—First, Rev. J. De L. Simmonds, Chilcomb Rectory, Winchester.

Jenner, Lewes, Sussex.

IONS (Silver or Gold-pencilled).—First, F. Pettis, jun., Newport, ight. Second, W. J. Garrett, Bentworth, Hants.

IONS (Silver or Gold-spangled).—First, J. Hunter, New Malden.

Ira. Pettatt, Ashe.

POOTRA (Light).—First and Second, J. Parca, Chertsey.

POOTRA (Dark).—First, R. W. Boyle, Dundrum, Dublin.

K. Fowler, Aylesbury.

HER VARIETY.—First, Mrs. Pettatt, Ashe. Second, J. Hinton, ath (Malays).

—First and Second, J. K. Fowler, Aylesbury.

—Prize, W. J. M. Pocock, Wotton Manor.

—Longest Ears.—Prize, E. E. M. Roys, Ashby-de-la-Zouch.

—Prize, G. Hill, Winchester. Foreign.—Prize, Mrs. M. E. Stratton. Variety (to include all points).—Prize, G. Hill.

—Mr. J. Bailly, 113, Mount Street, Grosvenor Square,

POULTRY AND EGG COMPANY.

due to Mr. Geyelin for us to state that we have from him his printed report to the Directors of this y, and a letter in which he states that the buildings mpany are erecting next to the Gas-works, Bromley, to the London, Chatham, and Dover Railway. Mr. has also published a pamphlet on the subject.

DRIVING BEES.

ED a swarm of bees in a straw-hive on the 21st ult., g to shake them out in the evening into a Woodbury At 3 P.M. they took flight and settled in a hollow elm tree in a neighbouring field. I should be glad to ow I can drive them up into a straw-hive. I have oking them and rapping the tree; as a last resource, sawed off the top of the stump where they are, and up the various avenues at the side, and made a fresh ough the decayed wood at the top, and propose set- otom board over their present egress, and placing on this. Do you advise my opening a side hole, ving in to them with a pair of bellows? Any sug- whereby I can secure the swarm will much oblige. I swarms be shaken in at once into a Woodbury h bottom board off, or into a straw-hive first and en up into a Woodbury?—B. B.

ould permit the errant swarm to remain in the it has chosen until the autumn, when by laying bare of the cavity the comb may be cut out and fitted Woodbury frame-hive. Even if you should fail in the bees themselves, their loss at that season will le importance, as plenty of your neighbour's com- bees may, doubtless, then be had for the trouble of and the inhabitants of a couple of hives if introduced

into the ready-furnished domicile will more than compensate for their loss.

We prefer hiving a natural swarm into a straw-hive and afterwards transferring it to the frame-hive by knocking out the cluster of bees on a cloth after dusk the same evening, and setting the Woodbury hive over them, supported on a couple of sticks, previously laid on the cloth in order to avoid crushing the bees.]

OVER-MANIPULATION.

WITH all due deference to "A DEVONSHIRE BEE-KEEPER," I hope he will sympathise with me when I tell him that the whole of the manipulations related by me at page 369, were necessary evils, being over-sanguine in the autumn of 1864, as to being able to bring through a number of weak Ligurian stocks placed by me in a position this spring not unlike that of my Devonshire friend in the spring of 1863. Unquestionably, had I not manipulated, I should not have lost the black hives, but I should have been minus several Ligurian stocks, and should not have been able to have decided that strange bees kill queens of other hives, thus fully illustrating the old saying, "There's ne'er a loss but there's aye some sma' profit.—A LANARKSHIRE BEE-KEEPER.

[I can fully sympathise with my Lanarkshire friend, and if he were in anything like the difficulty in which I found myself during the summer of 1863, do not wonder at his resorting to over-manipulation in the endeavour to extricate himself.—A DEVONSHIRE BEE-KEEPER.]

DEATH OF A QUEEN—FERTILE WORKERS.

IN your remarks on the letter of "J. M. W.," at page 392, of your Journal, you say that a young queen was reared after the expulsion of the old queen, and that she remained a virgin owing to the non-existence of drones, and so she became a drone-breeder. Now, in this statement you are certainly mistaken, as the queen that was thrown out was the identical old queen that was found on the combs on the 4th of April, as she had the same piece torn out of one of her wings, and corresponded in every other respect to that identical old queen.

We did not, as you say, make any mistake in joining the other stock of bees and fertile queen to the stock that contained fertile workers and drone brood in worker cells, by not first removing the living drone-breeding queen, because there was no living queen in the hive, and so she could not be removed. The combs I carefully looked over twice, and it is rarely necessary for me to do that to find the queen. And the old queen when thrown out had every appearance of having been dead some time, by the mouldiness or fungous appearance when I picked her up, which never was the case with a queen that had not been dead twelve hours. So in both cases you were decidedly mistaken.

I think I may venture to say, that I have joined more stocks of bees in the last twelve months than any person in England, without a single case of quarrelling or loss of bees, and yet I now never use anything but pure sugar and water, and it is perfectly astonishing how successful all these operations turn out, considering these supposed great mistakes. As you say "All's well that ends well."

Now for fertile workers. I was a great unbeliever in their existence, but a case in my note-book seems to prove that they do exist; but I should be glad if some of your correspondents would give us any experience they may have on this interesting subject.—WM. CARE, Clayton Bridge, near Manchester.

[We omit the details copied from your note-book, as they have already been published in another periodical. Similar instances have been before related in our columns, and the one in question amounts to this, that in June, 1864, a young Ligurian queen was missing, notwithstanding which drone eggs were laid in worker cells, and on being afterwards supplied with worker-brood the bees formed seven royal cells which hatched out in due course. The occasional though rare existence of fertile workers was first demonstrated about a hundred years ago, and has since been abundantly confirmed by Huber as well as by more recent observers.

With regard to the incidents related by "J. M. W.," we

are still of opinion that the drone-brood which existed in all stages of development, was due to the presence of a living queen, although the statement as to the diminutive size of the one which was expelled, so far misled us as to make us believe her to be a young princess, instead of which it appears she was really the old original queen with the torn wing. We have, however, now no doubt that she was an exhausted queen incapable of laying any but drone eggs, and that the drone-brood found in the combs was laid by her. Whether living or dead, it is admitted that she was in the hive when the union was effected, and with such strong *prima facie* evidence of her existence before your eyes as the presence of drone brood in all stages, we still consider that a great mistake was made by introducing a second queen without instituting such an examination as would have insured the previous discovery and expulsion of the old one. Unless you possess the gift of clairvoyance and are thereby enabled to watch the proceedings of every other apiarian however distant, we should not be surprised to find you also mistaken in asserting that you have joined more stocks during the last year than any other person.]

EARTH CLOSETS.

ALLOW me to thank your correspondent "G. S." for the kind and courteous expression of feeling towards myself contained in the Number of your Journal for May 23rd, and at the same time to call his attention to the mistake into which he, in common with Mr. Wilmot, has fallen, of either regarding the form of closet which he has used as the only form, or of supposing the defect in that form of which he speaks as irremediable. The truth is that the larger use of these closets had brought that defect so forcibly before my mind, and at the same time I was led to see so clearly that in order to effect one very great object with myself—namely, that of getting this system introduced into sick rooms and hospitals, there must be something simpler and less expensive contrived, that I once more turned my attention to machinery. The result is a contrivance which is certain in its action, and which almost rivals Mr. Wilmot's scoop in simplicity. I have it in full use in a tolerably large family, and the more carefully I examine it and observe its use the better satisfied I am that the failure of which "G. S." speaks cannot in it occur. I hope Messrs. White & Co. will exhibit some specimens at the coming exhibition at Hereford.—HENRY MOULE, *Fordington Vicarage*.

My attention has been called to a letter in your Journal of the 16th May from the Rev. Henry Moule on the earth-closet system, in which I am alluded to. I should be sorry that either Mr. Moule or any of your readers should suppose that I consider ashes, or rather the small dust obtained by riddling ashes, as a better deodoriser than simple dried earth or clay.

I do not think that anything I have written can bear out this assertion; but, at any rate, my view is this, that, admitting simple dried earth to be the best deodoriser, it is still wisdom to use that sort of dried earth which comes most convenient in any particular situation—for instance, to bring dried earth into a town in the dog-days seems unnecessary, as there is likely to be a sufficient quantity of dust in the streets and houses which must, at any rate, be removed, and the dust obtained by riddling cinders, or the flue-sweepings from adjacent manufactories or foundries, is always available. I believe the more the particular article to be used is dried and pulverised the better, and in this way both dust and closet soil can be made portable and removable without offence. I do not think the earth-closet system could be well carried out in any place where there was not a good system of sewerage, as it is the wet and damp in most places which makes the present water system offensive and unhealthy. I am a great advocate for water as a means of personal cleanliness; but if the same skill and attention which was applied thirty years ago to the water-closet system had been given to the earth-closet system, when cesspools were very rightly abolished, our agriculture and mills of health would have been benefited in an extraordinary degree.

Mr. Moule will be glad to know that his earth system is

extending in many quarters. It has been adopted in Dorchester Castle, which is, I believe, a county gaol, on the recommendation and example of the Derby county gaol. It is also on trial at the Belper union, and I heard the other day of the secretary of a water company who has now established one or two earth closets as an experiment, as he found the water was wasted under the other system. In another quarter it is found convenient to use the refuse sand from an adjacent foundry, as it can be got dry without trouble, and also because it contains charcoal. As a general rule I believe sand is not a very efficient deodoriser, but I find it convenient myself to use it instead of straw for bedding in certain cases; and my gardener, who has an eye to his potting plants, is very glad to use my dried sand, especially when he has converted it into guano by reusing it in the earth closet belonging to his particular department.

Mr. Moule asks, Where will Mr. Wilmot find his coal ashes in India? If he will refer to the tenth page of my pamphlet he will see that I particularly refer to the facilities for obtaining dried earth in that country.

Mr. Moule, by first originating a particular system, and then by his untiring energy in following it up, has made himself a public benefactor; but he must not quarrel with those who, in endeavouring to follow in his steps, may sometimes think they can venture to try and improve on it. Should he at any time visit this part of England he might see his system carried out without the mechanical aid he advocates in a very large manufacturing establishment, both in-doors and out, and in a crowded room. In the Derby county gaol urinals are used with galvanised iron pails beneath, and the contents are poured over the gaol guano store (which is, of course, kept under cover), much to its improvement, and still without causing offence.

The writer who signs himself "UPWARDS AND ONWARDS" rather implies that I must be opposed to the use of sewage as a means of irrigation. On the contrary, I am watching with great interest the trials of its application to land by gravitation, and have just read an interesting pamphlet lately out on the subject, by Mr. Lucius Spooner. I do not pretend to judge of the extensive operations now on trial, but I am of opinion that in railway stations at any rate, and in most public establishments, the dry earth system might be adopted with great advantage, and I do not think the night soil belonging to such places should find admission into the public sewers, but people must be first taught to appreciate the value of what they waste.—E. WILMOT, *Milford, Derby*.

[Here the discussion must cease in our pages.—Eds.]

OUR LETTER BOX.

HENS NOT LAYING (W.).—There is no cause apparent in the account you give that should prevent the fowls from laying. It may be they have laid out for the present. Your twelve Hamburgs did well, when they provided nine eggs per day. The Cochins have, probably, gone off from change of food, soil, &c. They will, doubtless, lay again, but you must not be surprised if they are broody. It is not uncommon in June. The hens are in an inflammatory state. Give them some lettuce to eat and withhold all whole corn. Let them have meal.

MORTALITY AMONG CHICKENS (G. F. W.).—Your food is not good enough to rear chickens upon. Give ground oats mixed with milk; boiled egg chopped fine; bread and milk; chopped, boiled, or roasted meat; curd, &c. Add a little good beer to drink, and they will soon do better. They are suffering from poverty. Rice and potatoes are the worst of food for young chickens.

CHICKENS DYING WHILST HATCHING (J. P.).—We believe your chickens die in the shell, because the eggs are kept too dry. It is well and profitable to moisten them for a week before hatching. When the hen is off, dip your hand in water and wring it over the nest, sprinkling the eggs thoroughly. Hens of every breed, when in a state of nature, leave their nest in the morning, and return to it draggled with dew—wet as if they had gone through a river. It is for this reason all their eggs hatch, but if they are kept hot and dry the inner membrane becomes as tough as Indian rubber, and the chickens, unable to get through it, die in the shell.

MICK IN NESTS (Percy Cross).—It is very likely some of the eggs were broken and the chickens killed by the hen in attacking the mites. Anything that disturbs the hen when sitting puts the eggs in jeopardy.

REARING YOUNG SWANS (R. H.).—When the Swans are first hatched, they should be fed with meal put in water. When they are older, they may feed out of a vessel some inches deep. The bottom should be covered with a sod of grass; on this put some meal, whole corn, and scraps of bread if you have any. They will often feed greedily in this way, when in any other they reject food.

PIG FOOD (R. A. J.).—A pig fattens equally well upon corn either ground or crushed. There are machines which grind corn into flour. Your query about stocks is answered last week, in replying to another correspondent.

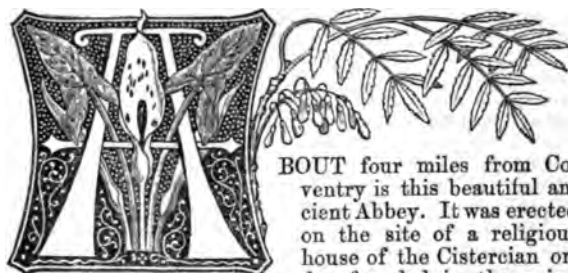
BEK GLASSES (Whitchurch).—Look at Messrs. Phillips & Co.'s advertisement. Their warehouse is 180, Bishopsgate Street Without, London. Write to them, and tell them what you need.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JUNE 13-19, 1863.	Average Temperature near London.			Rain in last 38 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
13	Tu	Upright Brome Grass flowers.	71.8	48.4	60.1	18	44	af 3	15	af 8	50	10	13	8	20	m. 6.	164
14	W	Floating Meadow Grass flowers.	72.3	48.6	60.5	17	44	3	16	8	19	11	29	9	21	0 4	165
15	Th	Woody Nightshade flowers.	72.9	48.8	60.8	16	44	3	16	8	45	11	44	10	22	Obef 8	166
16	F	Henbane flowers.	72.5	49.0	60.2	17	44	3	17	8	morn.		after.		(	0 21	167
17	S	Corn Cockle flowers.	72.9	48.0	60.5	21	44	3	17	8	12	0	17	1	24	0 34	168
18	Sun	1 SUNDAY AFTER TRINITY.	72.7	49.9	61.3	19	44	3	17	8	39	6	35	2	25	0 47	169
19	M	Viper's Bugloss flowers.	70.9	49.2	60.0	21	44	3	18	8	11	1	51	3	26	1 0	170

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 72.3°, and its night temperature 48.8°. The greatest heat was 93° on the 19th, 1846; and the lowest cold, 30°, on the 15th, 1850. The greatest fall of rain was 0.84 inch.

COMBE ABBEY,
THE SEAT OF THE EARL OF CRAVEN.



ABOUT four miles from Coventry is this beautiful ancient Abbey. It was erected on the site of a religious house of the Cistercian order founded in the reign

of King Stephen, and is said to have been the first settlement of the monks of that order in this country. Of the ancient monastic pile a portion of the cloisters only remains; the greater part of the present building was raised by Lord Harrington. On the west side of the house is a large addition, which, though externally of a heavy appearance, contains some noble apartments. The rest of the edifice is of the Elizabethan style. An historical interest attaches to this building. It was here that the Princess Elizabeth, daughter of James I., the beautiful and unfortunate Queen of Bohemia, passed the early days of her life under the tuition of the accomplished Lord Harrington. From this spot the Guy Fawkes conspirators had formed a scheme to remove her. A party under the pretence of hunting were to assemble near the house, seize the person of the Princess, and by proclaiming her Queen, use her name in stilling and composing the minds of the people. The enterprise was confided to Sir Everard Digby, but the attempt failed, and the Princess escaped to Coventry. The Abbey has altogether that air and those vestiges of old times which must, independent of its connection with the Queen of Bohemia, give it great interest in the eyes of the lovers of old English homes, and of the traces of past generations.

Mr. Bennett, gardener at Brandon Hall, kindly volunteered to accompany me to Combe Abbey. The first impression of the place was very striking. Having walked along what to all appearance was a straight avenue a mile long, we entered the park, Combe Abbey being visible in the distance. The park of 460 acres is well wooded, with several avenues of very old trees diverging from the house. Having passed by the lake (which was being enlarged by Mr. Nesfield), in front of the house, and through the pleasure ground, the first object that attracted attention was a ribbon-border on the south side of the garden wall 233 yards long; it was planted with standard Roses at back, then following in successive rows—Trentham Rose Geranium, Purple King Verbena, Christine Geranium, yellow Calceolaria, blue Lobelia, Cerastium tomentosum, and then a broad verge of grass. On the west side were similar borders, 40 yards long, at each side of the entrance to the kitchen garden,

with a chain of circles planted in the following order:—Christine Geranium, Baron Hugel Geranium, Flower of the Day Geranium, yellow Calceolaria, Tom Thumb Geranium, with Ageratum, white, scarlet, and purple Verbenas, edged with Cerastium, planted in squares around the circles. Each side was planted alike, and a row of noble specimens of *Humea elegans* filled up the background. This arrangement had a beautiful effect.

The kitchen garden is entered through an ornamental screen composed of varnished oak, and erected in the mediæval style. It is in the form of a parallelogram from east to west, with a walk 12 feet wide running up the centre and terminated by a new and beautiful garden-house, and a cross walk divides it into vegetable quarters. At both sides of the main walk are borders, 8 feet wide, planted ribbon-fashion, with Trentham Rose Geranium at back, then a row of Lord Raglan Verbena, then Flower of the Day Geranium edged with the small-leaved Ivy from the woods. This Ivy is also employed for edging all the walks in the kitchen garden, and very suitable it is for the purpose. In the centre of the cross walk, and parallel with the main walk, is a large circular basin furnished with five jets; the ribbon-borders are carried round the basin and along each side of the cross walk, and are planted similarly to those by the main walk. From this spot a bird's-eye view of the park is obtained through a pair of iron gates on the south side of the garden.

Against the north wall, and facing the south, is a noble range of glass in eight divisions. The two end divisions, or the first and eighth, are each 50 feet by 12, and are planted with Peach and Nectarine trees taken for the most part from the walls in June, 1862; they are fine healthy-looking trees. The second and seventh divisions are succession-houses, each 40 feet by 15, planted with Buckland Sweetwater, Black Hamburgh, Golden Hamburgh, Pope's Hamburgh, Victoria Hamburgh, Black Prince, and Sweetwater. The third and sixth divisions are also vineries, each 45 feet by 12, planted with Syrian, Canon Hall, Muscat of Alexandria, Passe Musqué, and Bowood Muscat. The fourth and fifth divisions are late vineries, each 50 feet by 18, containing Champion Hamburgh, Victoria Hamburgh, Barbarossa, West's St. Peter's, and Lady Downe's. They are all planted inside the houses with arches to allow the roots to pass partly outside. The borders are composed of good maiden loam resting on about 9 inches of rubble. In the middle, and in connection with the range, is a corridor in which are two tanks that hold about four thousand gallons of water each, having a four-inch pipe, flow and return, passing through them; thus affording, when necessary, a constant supply of hot water for the use of the houses.

Midway between the fountain and the east end of the garden was a cross wall, and instead of pulling it down Mr. Miller, the head gardener, very judiciously converted it into two Peach-cases, leaving an opening in the centre 26 feet wide, and carrying the front glass the height of the wall, and covering it with a flat span-roof. The trees are planted in front, and trained along the middle of the

cases on wire trellises 5 or 6 feet high. The back wall is planted with trees also on wire trellises, and by this arrangement the trees are all freely exposed to the light. On entering the garden from the west end next the Abbey, these cases have a very ornamental appearance in front, and at the same time serve as a beautiful screen to the plant-houses at back.

The greenhouse, 75 feet by 18, contained the usual assortment of plants. Amongst them were *Geraniums* Lord Palmerston and Rendatler, the latter with a large pink truss of well-formed flowers, and *Cassia corymbosa*. The stove and fernery together are 75 feet by 18. The Ferns occupy a length of 35 feet, and stove plants the remainder. Conspicuous among the latter were the *Allamanda Schottii* and *neriifolia*, *Croton variegata*, *Passiflora quadrangularis*, tree Ferns 8 feet high, *Polypodium aureum*, *Pteris argyræa*, and several others in a most luxuriant state, with the *Cissus discolor* gracefully hanging from the roof all over the house. In the Fern compartment is a series of double arches against the back wall for supporting two borders in which Ferns are planted out of their pots. In front of these is a tank of heated water, and a stage over it for setting Ferns on. Behind this are arranged, one on each side, a house 80 feet long by 15 wide, heated by hot-water pipes and a tank, and containing Cucumber plants bearing fine fruit and a succession of young plants, and another of the same dimensions, in which were fine crops of Melons. The sorts were *Monarch*, *Chichester Prize*, a large fruit, and *Brandon Green-flesh*. On the other side, to correspond, are the fruiting and succession *Pine-pits*.

The improvements in course of being carried out comprise a Rose garden, a *Rhododendron* or American garden, and a miniature fruit garden, and the soil dug out according to the instructions of Mr. Nesfield, to enlarge the lake, is intended to form a beautiful terrace garden. In the pleasure grounds are some fine old Oaks, Spruce and Scotch Firs, and other forest trees and shrubs. Every tree is in perfect beauty, feathered to the ground, and the outlines of the groups and of the plantations indicate a state of nature, free from the interference of cattle, most favourable to this landscape scene.

It is only three or four years ago that the old and dilapidated garden walls and houses were taken down, and the present new walls and horticultural buildings erected by Mr. Gray, of Danvers Street, Chelsea. The remodelling of the kitchen garden and the many other improvements carried out and in the course of completion, reflect much credit on Mr. Miller. His exhibitions at the Royal Horticultural Gardens attest his practical abilities, and a visit to Combe Abbey will prove that he is the right man in the right place.

While Mr. Miller was engaged with a friend I took a stroll into the young men's apartments, and I was delighted to see the accommodation provided for them. Mr. Miller, to his credit be it said, when erecting the beautiful horticultural buildings and garden-house, did not forget to provide comfortable accommodation for the young men who lodge on the premises. While an individual is surrounded by discomforts, it requires a greater share of fortitude than falls to the lot of many, to resist temptations which offer pleasure as well as comfort. To prove the difficulties and temptations, it is only necessary for the writer to recall to his recollection the many instances when time was misspent and frivolity the disorder of the evening. As the services of young gardeners are required, during the evenings, to attend to fires in the forcing department, it is unkind, to say the least of it, to lodge them in sheds too often unfit for human habitations.—WILLIAM KEANE.

PROPAGATING AND AFTER-MANAGEMENT OF BEDDING AND OTHER PLANTS.

(Continued from page 376.)

THE soil most suitable for propagating nearly all kinds of bedding plants is a mixture of loam, leaf soil, peat, and river sand in equal proportions. After this has been well incorporated together it should be sifted through a sieve about half an inch wide in the mesh, and a finer sieve should be used for sifting the soil the second time. The small lumps of soil, sand, &c. that will not pass through the riddle this

time should be saved for putting on the top of the drainage to prevent the fine soil from running down amongst it. I have often seen large lumps of fibrous peat, moss, loam, &c. put in on the drainage for this purpose; but this is a very bad plan, and it should be avoided for this reason: after the cuttings are struck it will be found on turning them out of the pots that the roots from many of the plants have grown into a single piece of moss or fibres, and these cannot then be disentangled without injury to the roots of many of the plants. When this happens loss of time in the growth of the young plant is sure to follow; for instead of its starting off into vigorous growth in a day or two after it is potted off, the energy of the plant is necessarily occupied in forming new roots to replace those that have been broken during the process of shaking them out of the cutting-pans. Where, on the contrary, the fine siftings are used on the top of the drainage instead of the fibrous lumps as described above, the cuttings can be easily separated without doing much harm to the roots.

When the soil is properly prepared see that the pots or pans, whichever are to be used for putting the cuttings in, are quite clean, especially inside. If dirty pots or pans are used, when the fresh lot of cuttings are turned out, it will be found that a large portion of their roots has been left sticking to the sides of the pots. In preparing the cutting-pans place about 2 or 3 inches of broken crocks in the bottom, putting in the larger pieces first, and finishing off with small pieces. On this place the siftings from the cutting-soil in sufficient quantity to fill up the small openings between the crocks; then fill the pot full of the prepared soil, and give two or three sharp taps on the potting-bench to shake the soil in evenly. Press the soil moderately firm with the points of the fingers, and give the pot two or three more taps on the bench. The surface of the soil should be about half an inch below the rim of the pan. Next place a quarter of an inch or so of finely sifted sand on the soil, or, if the sand is put lightly on and scraped off level with the top of the pot, the sand should then be pressed down firmly with the bottom of a small flower-pot. This will leave a space of about a quarter of an inch between the rim of the pot and the sand. The small space above the sand is required to hold the water when the pans are watered. If the surface of the sand is level with the rim of the pot, and the cuttings are left long after they are struck, the sand gets baked or cased over, and the water, instead of soaking in to nourish the plants, runs off, leaving them quite dry. A batch of cuttings left in this way soon becomes infested with green fly, and when once this pest takes firm hold the pot of cuttings might as well be thrown to the rubbish-heap.

The sand when used should be in a nice moist state, and should not be watered before the cuttings are put in. I mention this particularly, because I have often seen persons after they have beaten the soil into the cutting-pans with a wooden mallet, toss them into tubs of water two or three times to consolidate the sand. This is one of the worst plans that could be adopted, for it soddens the whole mass of sand and soil, and the consequence is that a large portion of the cuttings damp off or refuse to emit roots. My plan is never to water the cutting-pans until the cuttings are all put in, unless these are very small, when it is necessary to have the surface rather firm. In dibbling in the cuttings be careful to place the base of the cutting on the bottom of the hole made by the dibber, then press the soil firmly around the sides of the cutting. After the pot is filled water with a fine rose, but only in sufficient quantity to consolidate the sand about the cuttings. If the soil is in good order—i. e., neither too wet nor too dry, very little water will be required between the time of putting the cuttings in and potting them off after they are rooted.

In taking the cuttings off great care should be exercised, especially if a large stock of any one kind of plant is wanted in a short space of time, and the stock to work from is very limited. It is not necessary to take the cuttings of *Verbena*, *Lobelia*, *Petunia*, *Calceolaria*, *Fuchsia*, &c., off at a joint. By doing so, two cuttings are sacrificed in the first place, and two-thirds of the number of plants that might have been struck from the same plant. My mode of proceeding is as follows: Let us take, for example, a plant of any of the above-named kinds, such as would be sent out

by a nurseryman—and such, if new, are generally small, having only a single stem. If the plant on its arrival were in good condition and had not travelled far, I should at once place it in a warm and rather shaded part of the stove or forcing-pit. On the second or third day after its arrival I should take the top of it off below the first pair of leaves, and as near the next pair as possible, so as to give as long a stem as possible below the first pair of leaves. The cutting should then be put in the cutting-pot, taking care that the base of the leaf or leafstalk is a little above the surface of the sand. If the cutting is inserted below the leafstalk the two buds at the base of the leaf will be spoilt. In three or four days, if the cutting has been properly treated it will have made roots, and in five or six days another pair of leaves, which may be cut off, the same as described above. By this time the parent plant will have sent up two shoots from the eyes at the base of the leafstalk, where the first cutting was taken off. As soon as the plant has made two pairs of leaves cut out the top pair; the plant will produce for the next crop eight cuttings, and will still go on increasing. Meanwhile the cuttings that have been taken off will be increasing in like proportion, so that in a short time from one plant a large stock may be produced. To illustrate this more fully I may mention a case in point that has occurred this spring. In February I had only two small plants of *Iresine Herbstii* or *Achyranthes Verschoffeltii*; from these two little plants, by working them on the system described above, I have propagated about 1300 plants. This, by-the-by, is likely to prove one of our very best bedding plants. It is far superior to *Amaranthus melancholicus*.—J. WILLS.

(To be continued.)

THE HYDRANGEA.

WHILE the discussion on the character of the soil and situation suitable for the well-being of the *Rhododendron* is going on, I would call attention to another plant not by any means so generally cultivated as it deserves to be, but which at the same time seems to be more affected by certain soils than most other plants, though the causes which produce so changed an appearance are by no means well understood. The plant to which I allude is the *Hydrangea*, which, though quite hardy, is not so extensively planted out as it ought to be. The variable character of its flowers when the plant is grown under certain circumstances has for many years been a sort of horticultural puzzle, which is still far from being satisfactorily solved. Plants with bright pink flowers and those with flowers of a tolerably good blue are not unfrequently met with in positions near each other, and apparently in soils exactly alike, while plants grown in an ordinary manner for the most part have either all pink or all blue flowers, as the circumstances of their abode may determine. Now and then certain modes of treatment, directed by skillful cultivators, present us with plants producing flowers of both colours; but that every attempt to change the colour of *Hydrangeas* is not attended with the desired success is a fact that need hardly be mentioned, and the many failures which have occurred have led to the conclusion that the proper means to accomplish the end in view are not yet sufficiently understood to be depended upon.

Some time ago Mr. Shearer, the very intelligent gardener at Yeator, stated his views on this subject in *THE JOURNAL OF HORTICULTURE*, and pointed out that iron rust would not always effect the change in colour so much desired. Mr. Shearer also showed, that experiments had been made which proved that much uncertainty existed whether the means employed were those absolutely effecting the change, or whether such alteration in the colour of the flower was not due to some other cause of which we are still ignorant. Be this as it may, *Hydrangeas* blooming pink and others blooming blue have been known for many years, and it remains yet to be proved whether iron in some form has anything to do with the change or not; but certain it is that the removal of a plant from a soil in which this element is only found in very minute particles to one in which it exists in greater abundance does not for some time produce any change, yet that a change does eventually take place in most cases (not all), is also generally admitted. Now to what cause is this change

due, and why is not the bloom of other plants affected in a like manner? This problem is highly suggestive of study, and offers a fair field for experiment.

In general, *Hydrangeas* growing in a peaty soil flower blue, while those in soil of an opposite character produce pink flowers, but there are exceptions in both cases, and this reminds me of your correspondent, "E. C. E.," at page 303, mentioning how well the *Rhododendron* thrives in some of the dells, as well as elevated positions, in Cornwall and Devon. I believe the same may be stated to be the case in most of the western counties, as far north as Cumberland, and probably still further north; but every hill and eminence is not suited to the *Rhododendron*, nor blue *Hydrangea*, and it is wonderful how the line of demarcation is drawn in some places. Some years ago I happened to be at Mount Edgecumbe, near Plymouth, and Mr. Pooley, the then gardener, pointed out the boundary line separating the blue *Hydrangea* from the pink one, which was also the line of demarcation, indicating where the *Rhododendron* ceased to do well. These boundaries, though not so marked as those of land and water, were nevertheless very evident. The most probable theory as to the cause of such variety in the crust of the earth is that at some early convulsion, something was thrown to the top at one place, which differed in its chemical constituents from what was exposed at another, though the two might be adjoining, and that each through the many ages of the world's history has maintained that difference. Though iron in some form may be said to exist to a considerable amount in most of the soils producing the blue *Hydrangea*, and though *Rhododendrons* thrive best in a soil in which this element is also found, yet I am not sure that we have not overlooked some still more active agent as being the cause in both cases. As a proof that iron alone will not always change a pink *Hydrangea* into a blue one, I may mention that large quantities of that metal have been at times added to the soil without the desired effect. Neither has alum dissolved in the water applied to the plants been always attended with success. On the other hand, now and then a plant will produce blue flowers without any apparent cause, so that we are sometimes almost led to the belief that caprice has something to do with the matter. It is almost unnecessary to say that is not the case, but our knowledge of the cause of the change is far from perfect. Time is always required, even when the elements necessary to effect the change are present, and a plant that has been growing under conditions favourable to the production of pink flowers, will not produce blue in the first season that it is removed to a soil where blue flowers are the rule. This slow change is easily accounted for, and need not be commented on, as the *Hydrangea*, like most other deciduous shrubs, sets its bloom-buds in the preceding autumn, and their expansion the following season will be in accordance with the character of the material in which they have been formed, but in course of time, in consequence of the new food, the juices of the plant become changed, and flowers of another character are prepared. This change may possibly not be effected, even in the second year, as I have witnessed, but it is sure to follow.

Notwithstanding the general hardness of the *Hydrangea*, it is not by any means so generally grown as it deserves to be, and in some cases where it has been injudiciously planted out in a damp situation its summer growth is not sufficiently ripened before winter sets in, and there is, consequently, no blossom. A low damp situation is by no means suitable to it: a dry, sunny, and airy one is more in accordance with its wants, and I believe the largest plant I ever saw of it was in a very exposed situation in Northumberland, elevated considerably above the surrounding country, but, at the same time, dry, the subsoil being the loose shatter stone overlying a freestone quarry. This plant flowered pink, as might be expected from such a soil; but if it had been growing in a valley not more than a stone's throw from its position, in all probability it would have produced blue flowers, if indeed it had bloomed at all, as a black peat morass of considerable depth formed the base of this quarry, thus showing how soils of a diametrically opposite character may be found in juxtaposition. I am not aware whether *Hydrangeas* were ever tried on this morass, but I have seen plants growing on a soil partaking largely of ferruginous matter, and the flowers were generally of a very good blue

and last summer a gentleman brought me some blooms of *Hydrangea japonica*, a species certainly inferior to the older one, and this was perhaps a brighter blue than I ever remember with the old one. The plant was growing on a dry sandy soil where the *Rhododendron* and others of its kindred were quite at home.

It is certainly remarkable that few, if any, plants show such a difference in the character of their flowers as the *Hydrangea* does when planted in soils favouring the two extremes. Most plants to which chemical and other substances are sometimes applied exhibit a difference in their general health as well as in their foliage, but the *Hydrangea* possesses as robust health in the one condition as in the other; at the same time we may be right in assuming pink to have been the original colour. Its change to blue seems to be due to some soluble substance contained in the soil and taken up by the plant, and carried through its system into the flower-buds. There may also be some peculiarity in the plant favouring the storing away of such soluble matter as will effect the change. Iron is the only substance that I have experimented with, and then only with varying success, but alum or some other salt may effect a change; still the light thrown on the subject is far from being satisfactory, and discussion may doubtless bring about a better understanding.

I cannot conclude without adverting to a very common disappointment—namely, that this plant will not produce blue flowers when grown in a pot and in peat soil, and water impregnated, perhaps, with chalk or lime is supplied to it from a well. Water of this kind neutralises the effects of the peat, and the flowers are pink instead of blue. I believe many of the so-called failures in obtaining blue flowers arise from this and similar causes. I may also add that such water given to Heaths and kindred plants growing in peat soil is at all times hurtful, as the soil and the water have opposite effects; and in the case of the *Hydrangea* it is useless to expect a good result from a mixture of opposite ingredients, as the chemical properties wanted in a soil must not be neutralised by the water administered to it possessing those of an opposite character, as the object sought after is rather an extreme than a neutral combination. Those, therefore, who expect to have blue flowers on *Hydrangeas* ought to be careful what description of water is supplied to them; and it is not too much to say that this has really more to do with the success of the plants than the soil they are grown in, but to make doubly sure the one as well as the other ought to be duly attended to.—J. ROBSON.

EARLY POTATOES.

I HAVE this day, May 20th, had my first "taking up" of young Potatoes. In No. 198 I have given an account of my method of cultivating my first open-air crop, I have followed the same plan this season with this difference—the weather was so inclement all February that I could not get the bed made till the beginning of March, and I did not plant till the 12th. Owing to our peculiarly gratifying unfrosty spring I had but few occasions to throw mats on the hoops—i.e., arches of slight stakes—during the whole month of April, not more, I think, than five or six nights; fortunately I did so on the night of the 30th, and thus saved my flourishing crop from being cut down to the ground.

My bed is 70 feet long and 6 feet wide. I take some credit for a little regularity in planting; for, knowing that we always become anxious to have new Potatoes when May is well advanced, I provided for a little waste in taking them up when only half grown. I therefore planted my rows 10 inches apart, and the sets 9 inches apart in the rows, 8 across, intending to take up every alternate row while quite young, leaving the others to perfect their growth. The plan has answered admirably. We have had, without any twinges of conscience on account of waste, young Potatoes every day since the 20th. I planted only two kinds—the Early Ten-week and the Royal Ashleaf; the former really deserves its name, for exactly ten weeks, less one day, had elapsed from the planting day, March 12th, when they gave from six to seven to each root, were as large as pullet's eggs, and quite delicious. The latter were not quite so large, but

lent flavour. The 60 feet of my bed planted with this sort was, and still is, a most gratifying sight, not a single tuber missed growing, and every bine is of the same regular growth, not a blossom to be seen, and remarkably robust.

To those who like young Potatoes I cannot help giving some small advice. They should be cooked within an hour after being taken up, and if delicacy of flavour is admired this rule should not be departed from till the end of October. The tough, indigestible, young Potatoes sent to the London markets from Cornwall and other distant places are distasteful to those who dig them from their own gardens, and more indigestible than any other vegetable. I look at them when taking my dinner in London in May and June, and avoid them, wishing at the same time that my friends could enjoy the delicate flavour of a freshly-dug young Potato.—FORWARDS.

ROYAL HORTICULTURAL SOCIETY.

JUNE 10TH.

ALTHOUGH in many of the classes the competition was very limited, and others were not filled at all, there was a very considerable aggregation of miscellaneous objects, which served with the others to occupy the conservatory and part of the two adjoining arcades. This much of the attendance of exhibitors—that of visitors was likewise not large, and it would appear as if the continuous round of flower shows had begun to tell prejudicially by diminishing their interest.

Among stove and greenhouse plants Mr. Fraser, Lee Bridge Road, exhibited by far the finest plant of *Phenocoma prolifera*, that has been seen of late years, and covered with a profusion of its bright crimson flowers. In the same collection were the showy scarlet *Clerodendron Kämpferi*, a very good *Stephanotis*, *Statice imbricata*, a large *Boronia serrulata*, and *Allamanda cathartica*. From Mr. Baxendine came *Hoya bella*, *Rhynchospermum jasminoides*, and a small plant of the beautiful *Clerodendron Thomsons* in fine bloom. In collections from Messrs. Lee of Hammersmith we noticed a large bush of *Erica Cavendishii*, *Ixora coccinea*, fine, a noble example of *Alocasia metallica*, *Rhopala De Jonghi*, *Dicksonia antarctica*, *Imantophyllum miniatum*, in fine bloom, Heaths, Azaleas, and other flowering plants.

Prizes.—For twelve: first, Mr. J. Fraser; second, Messrs. Lee. For six: first, Mr. Kemp, gardener to Earl Percy, Albury Park. For six (Nurserymen): first, Messrs. Lee.

Orchids were likewise not numerous, and several of the prizes were withheld. Among them were *Aërides Lindleyanum*, roseum, and *Larpenæ*, some poor examples of *Calanthe veratrifolia*, *Phalænopsis*, including *Luddemanniana*, *Vandas*, *Saccolabiums*, a few *Oncidiums*, *Brassia verrucosa*, and *Ladies' Slippers*. *Cattleya Acklandiae*, from Messrs. Lee, was very rich in colour.

Prizes.—For nine: second, Mr. Robson, gardener to G. Cooper, Esq. For nine (Nurserymen): first, Messrs. Lee; second, Mr. Parker. For six: third, Mr. Robson.

Roses appeared to have suffered somewhat from the sun. Mr. W. Paul, and Mr. Francis, of Hertford, were the only competitors in the Nurserymen's class. The former had a charming plant of *Comtesse de Barbantanne* with about forty of its pale flesh-coloured blooms; *Caroline de Sansal*, beautiful; *Paul Perras*, fine; and *Marquise de Foucault*, pale yellow. The foliage, moreover, had a healthy substantial appearance. From Mr. Francis came *Souvenir d'un Ami* and *Chénéfolé*, with large blooms; *Charles Lawson*, *Paul Perras*, *La Reine*, and others in good bloom. Mr. Terry, gardener to W. G. Puller, Esq., Youngsbury, also exhibited plants in good bloom; and some beautiful Hybrid Perpetuals in nine-inch pots were shown by Messrs. Paul and Son. One of them, *La Brillante*, very dwarf and compact, had no less than a dozen blooms, which did not belie its name, being a very bright carmine. *Madame Charles Wood* and *Olivier Delhomme* were likewise very brilliant. The others were *Anna Alexieff*, with six fine blooms; *Madame Boll*; and *Souvenir de la Reine de l'Angleterre*. A fine collection, upwards of forty in number, was also shown by Messrs. Paul & Son. Of cut blooms, Mr. W. Paul exhibited no less than ten boxes; Messrs. Paul & Son, eight; Messrs. Lee, six; Mr. Clarke, Brixton Hill, the same number; and several came from Mr. Cant, Colchester, Mr. Batley, and

one from Mr. Fountain, gardener to Miss Wood, Hanger Hill. In these stands were beautiful examples of the leading varieties. Among those from Mr. W. Paul were beautiful trusses of Gloire de Dijon and Celine Forestier; whilst Cloth of Gold from Mr. Cant was particularly worthy of remark.

Prizes—For twelve: first, Mr. Francis; second, Mr. W. Paul. For six: first, Mr. Terry. For six in nine-inch pots: first, Messrs. Paul & Son; second, Mr. Francis. For cut blooms (miscellaneous): first, Mr. W. Paul; second, Messrs. Paul & Son; third, Mr. G. Clarke.

In Pelargoniums, again, there was but little competition, and one collection ought never to have been staged, being almost destitute of bloom. Plants in excellent bloom from Mr. Fraser were the only ones shown in the Nurserymen's class. They consisted of Fairest of the Fair, James Lodge, Prince of Prussia, Lord Clyde always very showy, Lillie, Mira, Lightning, Bracelet, Mar Polaire, Leander, Angelina, Douglas, and Lizard. In the Amateurs' class the best exhibition came from Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, the varieties shown being the same as at the Show on the previous Saturday. In Fancies, Delicatum, Miss in Her Teens, Undine, Cloth of Silver, Roi des Fantaisies, and Hebe, from Mr. Fraser, were very good.

Prizes—For twelve: first, Mr. Fraser. For nine: first, Mr. Ward; third, Mr. Marlow, gardener to J. Wigan, Esq. For six Fancies: first, Mr. Fraser; third, Mr. Marlow.

Of new and rare plants there was a very large assemblage, principally contributed by Mr. Veitch and Mr. Bull, and forming by far the most interesting part of the exhibition. Most of them, however, have been already described in our columns. Mr. Veitch had first-class certificates for a pretty *Pteroma*, *Bertolonias pubescens* and *guttata*, both very pretty; *Maranta Veitchii*, *Goodyera Veitchii*, one of Mr. Dominy's hybrids between *Goodyera discolor* and *Anactochilus*; *Gymnogramma flexuosa* from Ecuador, with very elegant finely-divided fronds, and of a climbing habit; a Peruvian *Begonia*, with rich velvety leaves, veined with white; *Philodendron* species with large, deep green, velvety leaves veined with white, *Adiantum colpodes*, *Maranta* species with the foliage spotted black at regular distances from the midrib, a red-veined *Gymnostachyum*, and *Anthurium cordifolium*. *Peperomia maculosa* and *Dracena nigra*, the latter with very dark foliage, were each awarded a second-class certificate, and *Peperomia acuminata* a third. From Mr. Bull came a numerous collection of the *Aucubas* sent home by Dr. Von Siebold differing in the size and marking of the leaves, as well as in the sex of the plant. The green-leaved was also shown in fruit. Many of the varieties were very fine, and to nearly all of them first-class certificates were awarded. As they all rejoice in very long names we shall refer the reader who may be curious about them to pp. 210, 265 of this Journal. Other novelties from Mr. Bull consisted of *Athyrium f. f. Vernoniae*, *Cupania undulata*, *Costus zebrius*, *Pandanus Blancoi*, *Rhodias* with silvery striped leaves, *Sphærogyne cinnamomea*, *Maranta Van den Hecke*, *Bertolonias margaritacea*, *Woodsia polystichoides Veitchiana*; the variegated *Podocarpus*, *Privet*, *Sedum*, *Aubrietia*, and *Viburnum*; *Ficus Porteana*, *Peperomia arifolia*, *Calonyction sanguineum*, *Anthurium cordifolium*, and others, for the numerous certificates awarded to which we must refer the reader to the prize list. Messrs. E. G. Henderson had first-class certificates for an Ivy-leaved Pelargonium, called *peltatum elegans*, with good trusses of rosy lilac flowers, for *Centaurea ragusina compacta*, for the variegated-leaved *Cheiranthus Marshalli*, and for a *Richardia* with leaves spotted with white. *Hydrangea japonica rosea* with ray flowers white and rose-coloured, had one of the second class. Mr. Thompson, Ipswich, sent *Primula Parryi*, a native of the Rocky Mountains, having pretty rosy purple flowers about an inch across; and *Pentstemon grandiflorus*, also from North America, having lilac flowers much larger than in the better known species. To both of these first-class certificates were awarded; as, also, to Mr. Salter, of Hammersmith, for a variegated *Sedum Telephium*, in which the leaves were yellow edged with green. The variegated *Polygonum filiforme*, also from Mr. Salter, received a second-class certificate. An *Abies* having the character of *A. Douglasii*, was shown by Messrs. Dickson & Turnbull, of Perth; and seedling Pelargoniums by Mr. Fraser.

Other objects consisted of Palms, economic plants,

Petunias, zonate and other Pelargoniums, from Mr. Bull; Pansies from Mr. Hooper, Bath, and Mr. Waymouth; Pæonies from Messrs. Paul & Son; Cacti from Mr. Hurn; Begonias from Mr. Marlow; an interesting collection of variegated plants from Mr. Salter; Dahlias and Roses beautifully executed in rice paper by Mrs. Stoddart; and plant-cases, window-boxes, and ornamental garden pottery from Messrs. Barr & Sugden, and Hooper & Co.

The exhibition of fruit was very limited. Mr. Ruffett, gardener to Lord Palmerston, had a first prize for a noble Providence Pine, and Mr. Standish was second. The best black Grapes were Black Hamburgh, large and well coloured, from Mr. Osborne, Finchley; Champion Hamburgh, with immense berries, from Mr. M. Henderson, Cole Orton Hall, was second; and Mr. Sage, gardener to Earl Brownlow, and Mr. Allen, gardener to E. Hopwood, Esq., Manchester, were third. In White Grapes Mr. Sage was first with very good Muscats, Mr. Horwood second, and Mr. Tansey third, with Canon Hall. Peaches chiefly consisted of Royal George and Violette Hâtive. With the first-named kind Mr. Hill, gardener to R. Hanbury, Esq., Poles, was first; Mr. Allen second; and an extra prize was awarded to Mr. Allen for three dishes of Violette Hâtive. In Nectarines Violette Hâtive, highly coloured, from Mr. Allen, Manchester, was first; and Elruge from Mr. Allen, gardener to J. B. Glegg, Esq., second. Mr. Hill was first in Cherries with an excellent dish of May Duke; Mr. Ruffett second with Belle d'Orleans. In Strawberries Mr. Hill was also first with a good dish of President. J. Wrench, Esq., exhibited Myatt's Pine Apple, a variety supposed to be lost; and Heckfield Seedling, a pale red variety, with the seeds very prominent, came from Mr. Dwerrihouse. The only dish of Figs was one of the Castle Kennedy, of which a representation is given in another page, from Mr. Fowler. Of Melons, the best Green-fleshed were King's, from Mr. Hill, first; and Wills's Green Gem, from Mr. Wills, Oulton Park, second. Scarlet Gem, from the same, and Mr. Gordon, Hampton Wick, was first and second. In miscellaneous fruit Mr. Standish was first with Cherries in pots, loaded with fruit; Mr. Wills second with a fine basket of Black Hamburgh Grapes, weighing 21 lbs.; Mr. Horwood third with a basket of Muscats; and an extra prize was given to Mr. M. Henderson for Red Frontignan. Mr. Dwerrihouse exhibited, not for competition, several fruits of Heckfield Hybrid Melon, a green-fleshed sort, of good size and appearance; and Mr. Hill a brace of his Cucumber mentioned at page 378.

THE UNITED HORTICULTURAL SOCIETY.

A FLOWER show within a short half mile of the Bank is a novelty indeed; but such an one took place on Tuesday, the 6th inst., in the garden of Finsbury Circus, the first held there, and probably the last for some time, as the Circus is doomed to be invaded by the Metropolitan Railway.

The exhibition was opened in the forenoon by the Lord Mayor and Lady Mayoress, and in the after part of the day there was a good attendance of visitors. The objects exhibited were rather numerous, and comprised some very good specimens of stove and greenhouse plants and Orchids. Along the centre of the principal tent were placed three fine specimens of *Dracena indivisa*, each about 10 feet high, contributed by Mr. Williams, of Holloway, who also exhibited remarkably fine plants of the Bird's Nest *Neottia vulgaris*, *Gleichenia dicarpa*, *Rhynchospermum jasmoides*, *Statice profusa*, variegated *Yuccas*, *Cordylina indivisa*, *Sphærogyne latifolia*, with large and beautiful leaves, and various other fine-foliaged plants, including two of *Dracena lineata*, probably the largest in the country. Mr. Williams likewise exhibited a fine plant of *Brassia verrucosa*, *Cypripediums*, *Oncidiuma*, *Aërides*, and other Orchids, as well as new plants. The latter consisted of *Todea superba*, *Gymnogramma Parsonii*, *Promenaea citrina*, *Peperomia arifolia*, and *Eranthemum sanguinolentum*, having the leaves veined with red.

Orchids were exhibited by Mr. Wilson, gardener to W. Marshall, Esq., Enfield; Mr. Baker, gardener to A. Bassett, Esq.; and Mr. Penny, gardener to H. Gibbs, Esq., Regent's Park; and, intermixed with Ferns and a few small fine-foliaged plants, they occupied a small tent by themselves.

Among them were a good specimen of *Odontoglossum nevium*, several good *Aërides* and *Saccolabiums*, *Phalsenopsis grandiflora*, in fine bloom, the South American *Cypripedium caudatum*, with three blooms, and several of the tail-less members of the same family, *Cattleyas* and *Lælias*, the new *Phalsenopsis Lüddemanniana*, *Trichopilia suavis* in good bloom, &c.

Roses were represented by plants in pots from Messrs. Paul & Son, and out blooms from the same, Mr. Turner, Slough, A. Smee, Esq., and Mr. Howard, gardener to J. Brand, Esq., Balham.

Of *Pelargoniums*, both show and Fancy kinds, in excellent bloom, were exhibited by Mr. Fraser, Lea Bridge Road; and from Mr. Turner came a collection of the new kinds sent out by him; one of them, Mary Hoyle, an orange rose with a white eye, and small dark maroon blotch surrounded by orange, was very pretty; John Hoyle, too, is a large and striking flower. Mr. Turner likewise showed *Lilium auratum*, and pot plants of Sir Joseph Paxton Strawberry. There were besides several exhibitions of *Zonals* and variegated *Geraniums*, from Mr. Hally, Blackheath, Mr. Holland, Isleworth, and others.

Of stove and greenhouse plants a good bank was made up by the collections of Messrs. Peed, Rhodes, Baker, Howard, and Wheeler, of Stamford Hill, and Regent's Park. Among them we noticed a plant of the new *Clerodendron Thomsonae Balfourii* in fine bloom, several fine *Heaths*, good *Azaleas*, *Ixora coccinea*, *Aphelaxes*, *Dicksonias* and other Ferns, *Dracenas* and *Marantas*, *Pteroma elegans*, and *Dracophyllum gracile* in good bloom.

Other objects consisted of numerous *Pelargoniums*, *Fuchsias*, and *Hydrangeas*, from Mr. Hayes, Edmonton; Ferns from Mr. Holland; cut blooms of Orchids from Mr. Bullen; *Calceolarias* from Mr. Crute and Mr. Forsyth; *Pansies* from Mr. Porter; seedling *Geraniums*, a variegated *Achyranthes*, and *Anætochils* from Mr. Aldred; Japanese *Aucubas*, and *Hymenophyllum tunbridgense*, from Mr. Wilson; and plant cases, vases, &c., from Messrs. Barr and Sugden, and Hooper & Co., the latter also showing *Ixias* and *Sparaxis*.

Fruit was represented by sound, well-kept *Dumelow's Seedling*, *Rymor*, and other Apples, and a well-grown Melon from Mr. R. P. Glendinning, of Chiswick. There were also two or three Pines, and some Cherries.

PROPAGATING FROM BARREN STRAWBERRY PLANTS.

YOUNG MELONS TURNING YELLOW.

Two years ago I forced some British Queen Strawberries in a vinery, and as several plants were blind, but grew splendidly, I had a clayed bed made for them in my garden, where they have remained till now. Not one flower has ever appeared on them or their runners.

Last year I had a number of runners, layered into sunken flower-pots, in a bed of Keens' Seedling, to form a new plantation elsewhere, expecting, as they formed strong plants before winter, to have a good show of fruit on them this summer. In the old bed were many barren plants, and as my gardener knew nothing of the danger of propagating from such, and as most plants in my young bed show only leaves, I think it probable that he found runners most plentiful about the barren old plants, and that my new bed is consequently to be mostly barren also. He grudges throwing away such very fine strong plants, and thinks they will fruit next year. Do you think he is right or not? I believe they would have all fruited this year had they not been naturally barren.

My Melon plants in tubs, in a piped pit, are as strong and healthy as ever man grew, but I am troubled by the young fruit turning yellow before they even blossom, and falling off. Very few set, though every bloom opening is carefully fertilised. One *Achapsnoir* has only one fruit of about 3 inches in diameter, and one of 2 inches; every other has refused to blossom. The plant grows amazingly. A *Malvern Hall* has plenty of about 3 inches in diameter, but now very female turns yellow before it is the size of a chick pea; and several other sorts. My tubs stand in cocoa fibre, on

to mend matters. Some tubs stand on a stone shelf; all turn yellow in them.—J. MACKENZIE, M.D.

[We do not think your Strawberry plants will ever do any good; they are evidently some worthless sort that has become mixed with your British Queens. The best thing you can do will be to dig them up at once, trench the ground 2 feet 6 inches deep, if your soil is good, and then mark out fresh beds. Put 3 or 4 inches of good manure in the bottom of every trench, and as soon as you can obtain runners from some sort that you are sure is true, plant them on the beds, and if they are kept well watered until they are established in their new quarters they ought to produce a fine crop next year. By putting the manure in the bottom of the trenches the roots are encouraged to go down after it; and afterwards, however dry the season, it will have little or no effect on the plants. These should be well mulched with partially decomposed leaves or manure in the autumn, to protect the hearts of the plants from frost. Your gardener's idea is evidently wrong.]

We think the soil is too rich for the Melons, and that the temperature has not suited them. Subjecting them to a high temperature one day, and to a low one the next, would have just this effect on them; or if they have been allowed to become dry at the roots it would cause them to turn yellow. The atmosphere should be rather dry just at the time they are coming into flower.]

SIR JOSEPH PAXTON.

WITH deep and sincere regret we have to communicate to our readers the death of this very able and excellent man. We can add little to what we recorded concerning him more than ten years since, for we then commended him, not merely because he was the most successful among the men of genius devoting themselves to the practice of gardening, but because he was the best example we could uphold for imitation to the rising generation of young gardeners. We are often asked by them, "What acquirements should we strive for besides a knowledge of the culture of plants?" and we know of no better reply than we could give than—Attain the same acquirements as those which were possessed by Sir Joseph Paxton. He was a good botanist, a good draftsman, and an excellent engineer, but he had two spirits mighty in promoting progress, presiding over these—the spirit of kindness, and the spirit of perseverance. Every one who associated with him at once felt that genial courtesy and frankness which were to be expected from such an open brow; and the late Duke of Devonshire, who so long aided and benefited by his efforts, may be accepted as the most competent of witnesses to his perseverance, and bore this testimony,—“I never knew Mr. Paxton resolve to undertake what he did not fully accomplish.”

Sir Joseph Paxton's entire career sustains that characteristic opinion. He was the son of a small farmer, and born in 1801, at Milton Bryant, near Woburn, in Bedfordshire. We accept this date because it is that which he wrote when engaged at the Chiswick Garden.*

The brother under whom Sir Joseph received his rudimentary instruction in horticulture, was Mr. John Paxton, successively gardener, we believe, to Sir G. P. Turner and Earl Hardwicke. This gentleman recommended the young gardener to Abel Smith, Esq., and through the latter's influence he was placed in the gardens of the Horticultural Society at Chiswick. Owing to some misunderstanding with some of the authorities of the Horticultural Society, Sir Joseph was about leaving their service and proceeding to America; but whilst this intention was just on the point of being carried out, it is said that he there first obtained the notice of the Society's President, the Duke of Devonshire, whilst holding a glowing cinder for his Grace's cigar. When Mr. Paxton thus attracted the notice of the Duke of Devonshire, he was foreman in the Arboretum department at Chiswick. This was in 1825, and the year following he became the Duke's head gardener and forester at Chatsworth. Here was an arena just suited to his powers, and genius—not only was the space, as he said, “unlimited,” but so were

* He is named in the Report of the Horticultural Society, as one, with many others, who set “an excellent example.”—(Transactions, New Series, ii., 455.)

the funds at his command for its adornment. Writing to Mr. Loudon in 1835, he says:—

"Previously to the commencement of the arboretum, the whole space which it occupies was covered with timber trees: these we have cleared away, so as to suit each genus with light, shelter, or shade, as it might require. The situation, though so much elevated, is yet, by the existing trees, so well sheltered, that, with this aid, our deep trenching, and the supply when necessary, of peat or sandy soil, the plants, in a few years will have made immense progress. There are about 1670 species and varieties already planted; and these will be increased, in a year or two, to about 2000. The whole length of the walk occupied with the arboretum is nearly a mile. The various bends in the walk may be accounted for by the unevenness of the ground, and its steepness in many places. The plants of those orders, the ligneous species of which do not grow large, such as Cruciferae, Cistaceae, &c., are planted near to the walk, and occupy both sides of it; and the larger ones, although planted similarly along both sides of the walk, are made to extend beyond the others to a considerable distance from it, as the bare inspection of the plan will show. The whole are planted at such distances from each other as their habits of growth require. Should 2000 more hardy trees and shrubs than can at present be purchased in the nurseries be introduced, there is plenty of space on each side of the walk to plant them. It is rather difficult to say exactly how much ground the plants at present occupy, as we have not measured it; but I think the seventy-five groups cover about forty acres.

"It is a great feature in this business, that the ground, the plants, the formation of the walk, the labour, &c., have not cost His Grace sixpence; the plants having been purchased, the ground prepared, and the trees planted, and all other expenses paid, with the produce of the trees cut down to make room for the walk and the groups. This you should, in some degree, point out to gentlemen who wish to introduce such an important feature as an arboretum in their country seats. At nine places out of ten, throughout the country, an arboretum might be accomplished on this plan; and I scarcely know a country seat where half the trees round the house do not require cutting down.

"In recommending arboretums to those who have got but a limited extent of ground, you should advise them not to plant varieties. We intend doing so, because our space is unlimited; but, if this practice were to become general, the nurserymen would furnish us with catalogues of 20,000 species and varieties, which would put a damp to arboretums at once, from the impossibility both of purchasing the plants, and of finding room for them: and besides, in a few years, the species and varieties would be so confounded, that they would, in many cases, not be distinguishable from each other. I shall keep a young man constantly examining the trees and shrubs in our arboretum, till I have removed everything from it that is not perfectly distinct, and rendered it in every respect as perfect as it can be made."

The next great works he was employed upon were the Waterworks, the Emperor Fountain of which tosses its waters to the astonishing height of 267 feet. This, and all his subsequent conceptions are among "the most surprising in the world."

In 1840, he completed the conservatory at Chatsworth, then the largest ever constructed. It required forty miles in length of sash-bars, and to meet this enormous demand he invented a machine for cutting them, which, to use his own words, "performed the labour of twenty men for one year, and consequently saved in money £1200."

As a literary man he has appeared before the public advantageously, as the Editor of "The Magazine of Botany," begun in 1833, but now no longer published; as the author, in 1839, of a little volume, "On the Culture of the Dahlia," as compiler of "Gardening for Cottagers," and the "Botanical Dictionary," the first of which was published about the year 1849, and the other about nine years previously.

We have now arrived at the most brilliant period of his life—the construction of the first Crystal Palace. Of its origin in 1850, we must republish the designer's own account.

"When the six eminent architects and engineers were selected as a committee to choose a design, Mr. Paxton says that he had no intention of offering one, for he took for

granted that something worthy of the occasion and of the nation would be selected by them. When the time approached for the production of plans there was a discussion in the newspapers as to the design best adapted, and he must say that the first sketch he saw in a number of the *Builder*, did not inspire him with any exalted notions, or raise any very splendid expectations of the result. It was not until one morning when he was present with his friend, Mr. Ellis, at an early sitting of the House of Commons, that the idea of sending in a design occurred to him. A conversation took place between them with reference to the construction of the new House of Commons, in the course of which he (Mr. Paxton) observed that he was afraid they would also commit a great blunder in the building for the Industrial Exhibition; adding that he had a notion in his head, and that if he (Mr. Ellis) would accompany him to the Board of Trade, he would ascertain whether it was too late to send in a design. He asked the executive committee whether they were so far committed to the plans as to be precluded from receiving another. The reply was, 'Certainly not; the specifications will be out in a fortnight, but there is no reason why a clause should not be introduced allowing of the reception of another design.' He said, 'Well, if you will introduce such a clause I will go home, and in nine days hence I will bring you my plans all complete.' No doubt the executive thought him a very conceited fellow, and that what he said was nearer akin to romance than to common sense. Well, this was on Friday, the 11th of June. From London he went to the Menai Straits, to see the third tube of the Britannia Bridge placed, and on his return to Derby he had to attend to some business at the board-room, during which, however, his whole mind was devoted to his project; and whilst the business proceeded he sketched his design on a large piece of blotting-paper. He was sorry he had not the original with him, but the fact was, Mrs. Paxton had taken possession of it, and if they were at all anxious to see it, the only possible way of gratifying their desires was by sending for her to the meeting. Having sketched his design on blotting paper, he sat up all night until he had worked it out to his own satisfaction; and by the aid of his friend, Mr. Barlow, on the 15th, he was enabled to complete the whole of the plans by the Saturday following, on which day he left Rowsley for London. On arriving at the Derby station he met Mr. E. Stephenson, a member of the building committee, who was also on his way to the metropolis. Mr. Stephenson minutely examined the plans, and became thoroughly engrossed with them, until at length he exclaimed that the design was just the thing, and he only wished it had been submitted to the committee in time. Mr. Stephenson, however, laid the plans before the committee, and at first the idea was rather pooh-poohed; but his plans gradually grew in favour, and by publishing the design in the *Illustrated News*, and showing the advantage of such an erection over one composed of fifteen millions of bricks and other materials, which would have to be removed at a great loss, the committee did in the end reject the abortion of a child of their own, and unanimously recommended his bantling."

We have but little more to add, for having achieved one, the construction of the second Crystal Palace was comparatively easy. He was justly honoured with knighthood in 1861, and the words accompanying the Queen's smiling greeting in 1864, might have been those used by another monarch to another man of many victories—"If you go on at this rate we shall have to invent marks of distinction for you."

While the Sydenham Crystal Palace was still in progress the nation had drifted into the Crimean war, and an army was transported to the shores of the Black Sea, but without any of those means of transport and equipment which have been properly called the legs of an army. When the deficiencies of our position were read in the ghastly tales of famine and pestilence that assailed our troops, the fertile genius of Sir Joseph Paxton, was called into play once more. The navvies that were employed in the erection of the Crystal Palace were a band of stout, active, hardy fellows, not devoid of a certain rough discipline, and whose courage had more than once been proved during the erection of the building, by confronting terrors as real as any they were likely to meet with while joining an army in the field. He suggested



Yours truly
Joseph Paxton

Government that a body to be called the Army Works should be formed out of these stalwart sons of toil; the suggestion was at once adopted at the War Office. It is to them to say that the superior condition of our troops at the close of the war was in a great measure due to assistance rendered by the body raised on the suggestion of an among the labourers employed by, Sir Joseph

354 a seat for Coventry had become vacant. Sir Joseph was in the height of his fame, and it was almost a matter of course that a man in his position should enter the House of Commons. He offered himself to the electors on liberal principles, and was elected. He has held his seat undisturbed, but continued ill-health induced him to resign his constituents that at the next election he should meet the renewal of their suffrages.

He remained at his residence of Rockhills, next the Crystal Palace, but though his declining strength had for a long time inspired serious alarm among his friends, latterly it somewhat improved. On the occasion of the recent show he entered the Crystal Palace for the last time, where the public were admitted endeavoured, as was

his wont, to review the whole display; but he was not able to accomplish a journey round all the stands. During the past week or two his state became gradually more precarious, and at eight o'clock of the morning of the 8th inst., he expired.

Sir Joseph followed the profession of an architect and civil engineer from the time when he constructed the great glass building in Hyde Park; but he did not relinquish his position at Chatsworth. Sir Joseph Paxton was happy in having won the esteem and friendship of many of the greatest and best in the land, who were glad to assemble in a brilliant circle as his guests at Rockhills. But he was happiest in the constant esteem and love, often and truly expressed, of the late Duke of Devonshire. Some time before his own death his patron handed to Sir Joseph Paxton a life policy for £20,000, upon which he charged himself to pay the premiums for Sir Joseph's benefit. This princely gift was the last of many others; but on the accession of the present Duke Sir Joseph had still a firm friend in the Lord of Chatsworth. Sir Joseph was a Fellow of the Horticultural Society, 1826; of the Linnæan, 1833; and in 1844 he was made, by the Emperor of Russia, a Knight of the Order of St. Vladimir.

CASTLE KENNEDY FIG.

Castle Kennedy Fig, of which the annexed figure is a representation, has existed at Castle Kennedy, in Scotland, for upwards of a century, but how it came there, and what was its origin, are matters on which we have no information. It is supposed that at some early date a former proprietor received it from the continent,

whether this was so, or whether it is a chance seedling, is not known, but there is no doubt that it is distinct from any other in cultivation in this country. The great distinguishing feature of this is its remarkable earliness. It ripens more than eight weeks before the White Marseilles, which is the only variety worth cultivated as a forcing Fig it surpasses every other for productivity with which it brought forward. The year in which our present illustration was taken, and was forwarded to us by Mr. Fowler, the skilful gardener to the Earl of Stair, at Castle Kennedy, was taken from a tree which was begun forced on the 20th of February last, and the fruit ready for use in May.

The fruit is of the largest size, orbinate or somewhat pyriform. The skin is of a greenish brown on the half nearest the eye, and of a yellowish green on the half nearest the stalk, and the surface is mottled with grey specks. The flesh when fully ripe is of a dull red colour with the stem tinged of red towards the base, very melting, and of good flavour. Mr. Fowler

observed that the Castle Kennedy Fig, when grown alongside the Marseilles, planted out and treated in every respect in the same manner, is about a fortnight earlier than the fully three weeks earlier than the Brown Turkey, and has a month earlier than the Brunswick.

"The importance of this will be apparent to those interested in the cultivation of Figs, not only for early forcing, but also for out-door cultivation, as it may be expected to ripen in cold and unfavourable localities where Figs have not heretofore been grown. In our wet and cloudy climate (Wigtonshire), it has ripened out of doors on a

standard, and always ripens on a wall having a south-east aspect, early in August.

"When within a few days of being ripe, a clear honey-looking substance, of exquisite flavour, commences to drop from the eye of each fruit. When quite ripe this substance becomes somewhat viscid, hanging like an elongated dew-drop, from half an inch to three-quarters in length, clear as crystal, giving a very remarkable appearance to the fruit.

"At page 428 of THE JOURNAL OF HORTICULTURE, Dr. Hogg, in addressing the Scientific Meeting of the Royal Horticultural Society, held on the 30th ult., in speaking of the Castle Kennedy Fig, says:—'The fruit, as would be seen, was very fine, and, instead of requiring four months to ripen when forced, it would do so in two, which was a very great recommendation.' Owing to my cramped writing, or some other cause, an error has arisen which I am anxious to have rectified—it should read *three months* instead of 'two months.'

"The fruit of the Castle Kennedy Fig which was before the meeting was com-

menced to be forced on the 20th February. The first ripe Fig was gathered on the 27th April; the first dish on the 23rd May: thus proving that when forced early it can be ripened in about three months. The Figs here are planted out in a border in the inside of the house, and all treated in every respect in the same manner."

Taking it altogether—its size, earliness, and fine hand-



some appearance—this is one of our most valuable acquisitions to pomology.

DRABA AIZOIDES.

To cottage gardens we are indebted for the preservation of some of our best and rarest plants. A wild flower which has long been in cultivation, one of those choice gems which the Messrs. Backhouse so well know how to use, has flowered splendidly during the spring months. *Draba aizoides* (Yellow Alpine Whitlow Grass), is a most interesting alpine, and one which will well repay a little extra care in its cultivation. It is a plant well adapted for growing on rockwork, and like many of its class its beauty cannot be shown in a small detached piece; to be admired it must be grown in a tuft of some considerable size. Thus grown the beauties of its bright yellow corymbose flowers are rarely overlooked. As it flowers very early in spring it is more to be esteemed, and the flowering season continues several weeks. Besides growing it in rockwork, this interesting plant ought to be grown among the frame alpine. Then if any losses happen from severe weather, these may be replaced by pot plants.—**RUSTIC ROBIN.**

REPORT ON THE BEDDING PELARGONIUMS GROWN AT CHISWICK, 1864.

By THOMAS MOORE, F.L.S., SECRETARY TO THE FLORAL COMMITTEE.

(Continued from page 416.)

SERIES II.—ZONATE VARIETIES.

2. FLOWERS CERISE, ROSE SCARLET, OR ROSE.

Alice (E. G. Henderson & Son).—Vigorous spreading habit; dark-zoned leaves; flowers cerise scarlet.

Apollo (Hally).—Vigorous habit; leaves zonate; flowers cerise. Of no use.

Aspasia ** (Bull).—Moderately vigorous habit; dark-zoned leaves; deep rosy scarlet flowers. The marks indicate its value as a pot plant.

Beauty ** (Williams).—Vigorous spreading habit; leaves with a broad dull zone; flowers large, rosy scarlet, of good form, and in fine trusses.

Bonnie Dundee ** (Bull).—Moderately vigorous and compact habit; leaves with a dark well-defined zone; flowers of good form, in compact trusses, of a cerise colour. It is a very pretty free-blooming pot plant, fully deserving on this account an equal number of marks with those given for its bedding qualities.

Bridesmaid (E. G. Henderson & Son).—Moderately vigorous; dark-zoned leaves; flowers cerise, with paler edges.

Caroline (Bull).—Moderately vigorous; leaves with a broad dark zone; flowers rosy scarlet, in large trusses.

Cecilia ** (Bull).—Moderately vigorous habit; dark-zoned leaves; rosy scarlet flowers. Inferior to *Roi d'Italie*; but a free showy variety as a pot plant, for which it was approved.

Cedo Nulli (Williams).—Dwarf vigorous habit; leaves with broad zone; flowers bright rosy cerise.

Celina (Bull).—Vigorous spreading habit; leaves marked with a dull zone; flowers rosy scarlet.

Chancellor (Bull).—Moderately vigorous; leaves with a dark zone; flowers salmon rose.

Cherry (Hally).—Moderately vigorous compact habit; leaves darkly zoned; flowers cerise scarlet.

Comte de Clapier (Van Houtte).—Moderately vigorous; leaves marked with an indistinct zone; flowers cerise. It was poor under glass.

Comte de Morny ** (Low, Scott).—Moderately vigorous habit; leaves with a broad, dull, vandyked zone; flowers cerise, of fine shape. A very handsome variety for pot culture under glass.

Conqueror of Europe (Williams).—Vigorous spreading habit; leaves with broad, dull, vandyked zone; flowers large, of good form, cerise, in fine trusses, but wanting in distinctness.

Countess (Bull).—Moderately vigorous; leaves dark zoned; flowers bright rosy scarlet.

Culford Rose (E. G. Henderson & Son).—Moderately vigorous; leaves marked with a distinct dark zone; flowers cerise.

Effective ** (Bull).—Moderately vigorous; leaves with a broad, dull, darkish zone; flowers of good form, cerise scarlet, free and showy. The marks indicate its value as a pot plant.

Effe (Bull).—Moderately vigorous; leaves with an indistinct zone; flowers in small trusses, but free, rosy scarlet. As a pot plant it has no particular merit.

François Chardine ** (Low & Co., Fraser).—Vigorous habit; leaves marked with a dark vandyked zone; flowers cerise scarlet, finely shaped, and in bold trusses. A very fine pot plant.

General Early (Wills).—Moderately vigorous; leaves dark zoned; flowers rosy scarlet.

Giralda ** (Low & Co.).—Moderately vigorous habit; leaves with a broad dull-coloured zone; flowers large, of fine shape, deep cerise.

Hector *** (Bull).—Moderately vigorous habit; leaves marked with a dark well-defined zone; flowers of good shape, in compact trusses, and of a bright cerise. It resembles *Bonnie Dundee*, but is decidedly better. It proved equally good as a pot plant.

Herald of Spring *** (Turner).—Vigorous habit; leaves with a broad, dark, vandyked zone; flowers of fine form, large, in compact trusses, cerise scarlet. A fine variety, larger and paler than *François Chardine*.

King Arthur (Wills).—Moderately vigorous; leaves with indistinct zone; flowers cerise.

Lord of the Isles *** (Williams).—Moderately vigorous habit; leaves with a broad dull zone; flowers rosy scarlet.

Louisa (Bull).—Vigorous habit; dark zoned leaves; light rosy scarlet flowers.

Marie Henri (Van Houtte).—Vigorous spreading habit; leaves marked with a broad dark zone; flowers deep cerise.

Minimum Nosegay (Turner).—Dwarf habit; leaves marked with an indistinct green zone; flowers loose, in small trusses, light magenta colour.

Monsieur Martin *** (Rollisson, Fraser).—Moderately vigorous habit; leaves with dark vandyked zone; flowers cerise scarlet, of fine form, in bold trusses. A very fine sort for pot culture.

Mrs. Turner (Wills).—Moderately vigorous; leaves with dark broad zone; flowers cerise.

Nora *** (Bull).—Of fine and rather vigorous habit; leaves with a broad dull zone; flowers large and of good form, rosy scarlet, in compact trusses. A fine variety out of doors, and of nearly equal merit under glass.

Paquitta (Salter).—Tall vigorous habit; leaves with a dull vandyked zone; flowers cerise.

Paul Labbé ** (Fraser).—Moderately vigorous; leaves with dull broad zone; flowers large and finely formed, of a salmon rose. A very fine pot plant.

Pink Pearl ** (E. G. Henderson & Son).—Dwarf spreading habit; leaves rather small, dull green, with a narrow zone; flowers very abundant, of a light magenta rose. Although the flowers were loose in form, they were abundant enough to be very effective.

President Reveil (Van Houtte).—Moderately vigorous; leaves marked with a broad zone; flowers cerise, of good form.

Prince Christian (Salter).—Moderately vigorous habit; leaves marked with a broadish dull zone; flowers freely produced, of good shape, cerise.

Princess of Wales (E. G. Henderson & Son).—Vigorous habit; leaves marked with a dull zone; flowers small, cerise-coloured.

Provost (Bull).—Vigorous habit; leaves with a broad dull zone; flowers rosy scarlet, of good form. Tolerably effective as a pot plant.

Regalis (Bull).—Vigorous habit; leaves with an indistinct zone; flowers large, well formed, rosy scarlet, in compact trusses freely produced.

Roi d'Italie *** (Low & Co.).—Dwarf and vigorous habit; leaves marked with a bold dark zone; flowers freely produced, large, of excellent form, salmon or cerise scarlet. A very fine variety for all purposes.

Rubens Improved (Carter & Co.).—Dwarfish habit; leaves faintly green zoned; flowers deep cerise scarlet.

Rubens Improved (Wills).—Moderately vigorous; leaves with a dark centre or zone; flowers rosy scarlet.

Umpire *** (Bull).—Vigorous spreading habit; leaves

with an indistinct and unequal zone; flowers of fine shape, large, in bold trusses, rosy scarlet. A beautiful pot plant.

Uxet (Bull).—Tall and vigorous habit; leaves marked with a narrow vandyked zone; flowers cerise. Too thin as a pot plant.—(*Proceedings of the Royal Horticultural Society.*)

(To be continued.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

If former directions have been carried out, this department will now present many agreeable features. Continual hoeing, forking, and surface-stirring, together with a splendid season, have told well upon the crops, which are abundant and vigorous. All these operations must be diligently persevered in, for the advantages derived therefrom are manifold, weeds are extirpated, slugs disturbed and destroyed, moisture retained at the time when it is most needed, and the healthy action of the roots kept up. Trenching vacant ground to be prosecuted where required, and if manure is wanted on ground to be planted, it is best to lay it on the top after trenching, and then fork it in. Let all green refuse be removed from every part, and either dug in or taken to the char-heap. *Cauliflowers*, the plants that are now forming their heads to be watered and mulched with short litter; this will cause them to come close and compact. *Celery*, continue to plant successional crops in trenches; take up the plants with as much earth about the roots as possible, and by no means shorten any of their leaves. Immediately after planting give them a good soaking of water. The earliest crops to have the earth loosened about their roots, as the frequent waterings it requires hardens the surface, and prevents it receiving the benefit it should from future waterings. *Cucumbers*, to produce fine fruit the linings of the frames should still be kept up, they should also be covered with mats at night, as it is sometimes cold. After the plants have been bearing for some time, and the shoots become a little irregular, cut them back, give them a good watering, and add 2 or 3 inches of fresh soil. After this keep the plants nearly without air for a few days, shading them when the sun is very powerful, sprinkle the plants with tepid water early every fine afternoon. With this treatment they will make fresh shoots, and will be found as productive as before. *Endive*, make a sowing for the main autumn crop. Plant out a few of the early sowing. Keep them watered till they get roothold. *Herbs*, some of them will shortly be fit for drying. The best time for doing so is just as they are coming into bloom. *Lettuce*, keep a quantity tied up for blanching. Make another sowing in drills where they are to remain. *Mushrooms*, there is much greater difficulty in producing them at this season than at any other, unless in a house constructed for the purpose. It is necessary to keep the temperature of the house down to 60°, to do this water should be frequently poured down, so as to produce cold by evaporation. *Potatoes*, earth-up the main crops immediately after rain. Keep the ground between the rows loose. *Spinach*, sow a few rows for succession; if the weather continue dry water the drills before sowing, and again after covering them. Whenever it is necessary to water do it copiously, as a slight sprinkling is worse than useless.

FRUIT GARDEN.

If dry weather continue we would recommend that due attention be given to fruit trees in the above respect, for as caterpillars and other insects are unusually prevalent an extra exhaustion will be the consequence. To those who are particularly anxious about the future success of their favourite fruits, or who have been planting new kinds, we would say, Make strenuous efforts during the present period to extirpate insects, and to assist weakly trees. No mode of planting, winter pruning, or system of training will be of any avail, unless the vegetation of the summer growth is attended to in due time.

FLOWER GARDEN.

During the continuance of the present dry weather frequent waterings must be given, not only to the recently planted trees and shrubs, but likewise to the bedding plants, annuals, &c. In watering, it will be better to give the soil a good soaking twice or thrice a-week in preference to a

mere sprinkling of the surface daily; mulching where practicable should be adopted, as well as damping the foliage of newly-planted things every evening. Peg down these plants required to cover the ground as they advance. Carnations, Picotees, and herbaceous plants, with the taller-growing bedding plants, to be staked and tied up to prevent injury from high winds. Remove dead and dying leaves from Roses, and give the autumn-flowering varieties plenty of manure water, in order to keep them in vigorous health and secure plenty of wood for blooming in autumn. Divide *Polyanthuses*; always choose for them a cool and shady situation, sheltered as much as possible from north and easterly winds. Mulch Dahlias with rotten dung, and give plenty of water in dry weather. Propagate Pansies by the side shoots. Mark seedlings worthy of being saved, and pull up the others. When showery weather occurs let the Box-edgings be clipped. London Pride, Thrift, Daisies, &c., used for edging should each year, or once in two years, be taken up, divided, and replanted when blooming is over.

GREENHOUSE AND CONSERVATORY.

Specimen and choice plants nearly done blooming to have the faded blossoms picked off and be well washed with the syringe; to be then placed in a cool shady situation to recover themselves before potting, which should on no account take place until a fresh growth has commenced. Shading will now be necessary for all descriptions of plant-houses, unless the roofs are covered with creepers. Air should be admitted largely, allowing more or less at night, according to the description of plants grown, and the paths, floors, &c., kept damp by throwing water repeatedly over them, to preserve humidity in the atmosphere of the houses, and owing to the extreme dryness of the external air it is rather difficult to do so. Encourage the growth of Azaleas and Camellias by keeping them comparatively close, with shade during sunshine, and supplying moisture liberally with the syringe.

STOVE.

Achimenes, Gesneras, Gloxinias, &c., as they begin to show for bloom, should be removed to more airy quarters, keeping them, however, partially shaded for a time, and afterwards they may be exposed to a larger share of light. Achimenes to be carefully attended to with water while growing. We must here repeat the advice so frequently given, to keep up by all appliances a sufficient amount of atmospheric moisture, increasing at all times with the increase of heat and light, and accompanied by a quiet motion of the atmosphere. Syringe freely twice or thrice a-day, and give morning air liberally.

PITS AND FRAMES.

Hardwooded plants in these structures will now enjoy a more moderate temperature than they possibly could obtain in houses, especially in pits turned to the north, which will prove a good place for some of the tribes in very hot weather. Let regular waterings be applied. The bottom heat should be kept up where cuttings and young seedling plants are propagated, and they should be shaded and duly supplied with moisture.—W. KEANE.

DOINGS OF THE LAST WEEK.

IN case we forget to mention it in these rambling notes, we would wish again prominently to direct attention to the impolicy of planting or sowing on stiffish ground when it is at all wet after rain. From having a lot of other matters to attend to we have not got so far on with bedding-out as we would wish in this fine weather; but as the plants are growing nicely in their earth-pits, a few days will make but little difference. Being anxious to get on, however, after the last rains we planted out some four or half a dozen of beds when the surface was not so hazelly dry as we would have liked it. Every time we pass them we wish we had left them alone. The surface seems so bound, and sodden, and hard baked that the soil will take much loosening with fork and hoe before it arrives at a nicely pulverised, healthy, sweet condition, whilst the slightest touch of the hoe in the other beds leaves the surface in a nice mellow state—in the best position in fact, as the soil is now warm enough for keeping heat out and moisture in.

Having had many a wet jacket from planting in a day of

pouring rain, we believe we were the first to draw attention to the impolicy of doing so, and especially on stiffish soil, and now some of our labourers, who see some gardening notes in their weekly newspaper, told us that the beds might as well have been left alone, and they were quite right. Such growing intelligence shows the importance of practising what we teach. All teaching is but of little use if not followed up by practical example, and hence it is that many a man and woman in humble station do more good by the example of their lives than many who have great talents, but who, if they were honest, would be forced to say, "Do not as I do, but do as I tell you." Again: several correspondents have kindly told us that after running down the use of the rake, and especially in flower-beds, we actually recommend the back stroke of the rake for effecting neatness (last line, first col., page 435). The seeming anomaly will be at once explained if the word "rake" is changed into "hoe." The mistake is entirely owing to rapid writing.

In answer to another inquiry, we may as well state here that the best-sized *Dutch hoe for flower-beds* is a neat light one 3 inches wide. With such a tool it is astonishing the space a quick lad will go over, and when extreme neatness is an object as well as loosening the surface, the back stroke and a side stroke along the outsides if next grass will leave all as neat as need be.

Stones.—If there are stones or pebbles on the surface larger than may be desirable, the quickest way to get rid of them is to pick them by hand in a basket or small barrow, and then they come in for filling ruts in roads, &c. We have no desire, however, to make the surface so very fine-dressed that will soon be covered with plants. We consider that many fields are much injured by inordinate stone picking. A few stones added would often be more beneficial.

Heap Making.—This leads us once more to note the importance of never using two strokes when one will do; in other words, to avoid doing and doing again, where one doing will suffice. On this very often depends whether a place shall be kept well or indifferently with a certain number of hands. In nothing is this seen more than in the question of heap-making. Unless in peculiar circumstances no heaps should be made in gardens, and of nothing in general are workmen more fond until they find it will not do. For instance, there goes a man to clear off a piece of spent vegetables, which it is not deemed advisable to dig in, up they come, and then are laid down in heaps as carefully as if for bean or wheat sheaves; and when that is nicely done a barrow must be brought, and there is the great pleasure of lifting the heaps again into the barrow. Last year we came across a fine example of stone heaps on a long flower-border, rather rough with stones, and the proprietor being a thorough advocate of dressiness in grounds, as well as in his own worthy person, the stones had been thrown into little heaps at the side, and then they had to be lifted a second time to get them into a barrow to take them to their destination. A keen amateur, fond to enthusiasm of his charming grass plot, told us lately, that he managed very well with his 14-inch machine, which gave him a nice appetite for his lunch or dinner, but then the taking off the heaps of grass cut with the machine thoroughly bored him. It was worse than all the machining, which he liked very well. He had seen others tumbling out the contents of the grass-box on the lawn, and he thought he must do the same. Placing a barrow in a suitable position saved all the trouble of taking up and cleaning the bottoms of heaps. Just so with clipping the grass edgings to gravel walks. How often do we see a tall, sprightly fellow, "with measured step and slow," draw the broom along these clippings, collecting them into little heaps at no great distance apart, and then another man follows with broom, barrow, and shovel, to collect all these heaps and make the bottom of each all right. A man and boy finishing as they go, would do the work in a fourth of the time, and with more comfort and satisfaction. We have seen brooms used to collect tiny heaps of leaves, &c., on lawns, to be afterwards collected in basket or barrow, if not obviously scattered by the wind, though a gardener's apron would have held twenty or thirty of them, and saved all further trouble. In our young days we used to wrap the apron round us, as something of which to be proud. It was considered anything but a badge of inferiority, or to be ashamed of. Now our young gardeners are so much gentlemen, as to

despise what their fathers venerated? The more frequent use of the apron would not only expedite much of their work, but preserve their clothes into the bargain. An old comrade of ours invariably in thinning Vine laterals, or thinning Grapes, let all go to the floor to testify that work had been done, careless of the plants below that might be thus inconvenienced or injured. We might have imitated him in the peculiar gusto with which he thus made appearance of work, if, on company being expected, we had not had to work hard all dinner time, go without dinner in fact, to clear off the rubbish we had wantonly made. An apron and a light basket or sieve suspended, would have enabled us to have left work at any moment, and without leaving a vestige of rubbish of any kind behind us. In these days, when few gardeners can get through the work to be done, this little matter of heap-making may be deemed of sufficient importance to arrest a little attention. For the value of the habits it would foster, we would be glad to see the old blue apron more esteemed and used. There might not then be so many heaps of decayed flowers and leaves thrown on the pathways and floors of houses, to the annoyance of every one except the operator, who may, like our friend, be determined to let people see he has been doing something, though this determination may greatly add to his labour.

KITCHEN GARDEN.

Much the same as last week. Sowed the last crop of Marrow Peas, such as *Ne Plus Ultra*, and the sweet little prolific *Pea Harrison's Perfection*, and a few of *Dickson's Favourite*. The last and early kinds will be our last main sowing some ten days hence. Sowed also our last Broad Beans, also more French Beans, Turnips, Radishes, Lettuces, &c. Cleared off a piece of run Lettuces, &c. It is yet early enough to have many run Lettuces, but here it may be as well to state that in some matters we have not been able to act up to the advice we give to others. First as respects these Lettuces—they have been very fine and early, and it would have been better had they been used up by those who liked them, instead of being allowed to bolt; but a stress of work elsewhere caused us to neglect them, and for want of water, or shade, or taking them up into a shady place, they have bolted, and are of no use to any one, unless a hungry pig should choose to munch them. Fortunately there are plenty of successions. Planting-out is very well, but frequent thin sowing is the best mode for having plenty of crisp Lettuces, and a north border is the best place during the hot summer months.

Peas.—Then as to sowing Peas for late crops, the ground should be deep-stirred, and well enriched, and the Peas sown in a kind of shallow trench, so that manure-waterings may be given if the autumn should be very dry. The deep stirrings and the rich dressings are the great safeguards against the autumn droughts, and also against deluging rains if they come, and pretty well keep all sorts of mildew at a distance. We managed all but the dressing, and even for Celery we must wait until we can empty a hotbed. How tantalising it often is to read, "Use plenty of manure for this and that," and you cannot lay your hand on a barrowload. We scarcely know as yet the amount of produce that may be obtained from ground from close and continuous cropping, and without ever allowing the ground to become worn-out, sour, or effete; but the secrets of the wonderful produce, and yet keeping the ground fresh, are, abundance of manure, deep stirring, and ever and anon adding to the staple, by first loosening, and by degrees adding a little of the subsoil, whatever be its character. Such means, and a due rotation of cropping, and the addition of lime, or some calcareous matter, if the soil is naturally deficient in these materials, will keep up the fertility of a soil, and prevent its ever wearing out. On some old kitchen gardens lime acts as wonderfully as it often does on bog land, and from similar causes. Even chalk will often do wonders on heavy clayey loams, and advantage should be taken of it wherever chalk underlies the clay or the loam; and again, Peas that are to be staked should have that work done before the tops are sufficiently heavy to have been swayed by the wind, as they never take to the stakes so kindly afterwards. Some of ours, from stress of other matters, have been let alone too long, but if done before wind comes they will not suffer. We will just glance at two common errors in pea-staking. The first is, that most operators thrust the sticks down too

the Peas, at the risk of injuring some of the best roots, should be fully 1 foot or more from the row, so give room for sun and air to enter freely. And again, persons place the stakes so as to incline inwards to the row, and even to cross each other at the top, so that finished the staked row would look like a steep span-house. This plan has neatness rather than utility to mend it. The higher part of the Peas will pass and receive but little support from the stakes. The plan is to place the stakes upright, or rather with points bent outwards, so as to form a wide-mouthed for the Peas to ramble in. As generally done, the, when finished, have the appearance of a sharp sugarloaf. We would advocate the same appearance with the wide part uppermost.

FRUIT GARDEN.

In the same as last week, nipping and thinning shoots, taking fruit, gathering green Gooseberries for jam, though selves if we use any, we are old-fashioned enough to the ripe fruit; exposed Peaches ripening to the sun; kept the vine drier where the fruit is ripening, soon as possible will clear out all plants, so that there is less moisture in the atmosphere. Removed from the house many laterals, but not too many, to let more light into the house. Have taken but few away yet in the later house, as in moderation they increase root.

No syringing has been given since the Vines broke, one large house no syringing was given at all, giving a little water on the paths and borders seems to be the necessary moisture. The syringe is a fine thing, it is possible to make too much of it. As yet no spider, it made its appearance.

ORNAMENTAL DEPARTMENT.

We detail the minutiae of the week, we would remain in the almanack. Proceeded with rolling, mowing, and watering the lawn. Planted groups of beds as we got opportunity preparing the beds beforehand, as alluded to some ago, a matter of more importance than early planting. have watered but little, but as the soil is now pretty proceeded with loosening the surface with a small hoe, or the points of a fork. Would mulch Calceolarias if we had the material ready. Tied up herbaceous needling that attention. Fine Auriculas and Polyanthus should now have the advantage of an open shaded place on the north side of a wall. Drip is their abomination. Pinks and Pinks need securing neatly. Removed most plants from conservatory, and set part on a north side on a little fine soil, where they can self-sow themselves. Sowed also some pans of the best for early flowering. Plants will also flourish all the summer planted out on the border. To obtain early plants of favourite kinds, a person is to cut them down, water well, and then plant out in any place. They will then throw up lots of strong plants which can be divided separately. Azaleas sadly need attention to cutting off all the old flowers, seeds, &c., giving them a good washing. They ought now to have to themselves, so as to give them plenty of heat and to finish their growth. It is thus that commercial growers can beat the small gardener. They have a place for everything. We often have to make one answer for everything, and yet it is thought that watering should be first-rate. Vineries are capital places for shifts for these purposes; but then if a single house should be on the Azaleas you will rue placing them in a vinery, and so the contest goes on. Those that need will now want more light, and air, and coolness to set their buds. Moved young Fuchsias into cooler places. Potted lots of Feathered Cockscombs, Balsams, and plants, and gave water and shade to Ferns, &c. *Caladiums* in fine colour we find they should never be exposed to direct sunlight. No syringing should be given unless the water is pure and clear. We find that the clearest water, unless filtered, we require to sponge the sediment so soon forms, and this disfigures the plants. Water, heat, and plenty of pot-room are their death. Whilst growing they may pretty well be treated as plants. In their younger state, especially, they delight in bottom heat. But all plants that like also benefit by bottom heat. The most striking

results are accomplished by its help. No great thing can be made of the old-fashioned Cockscomb without its aid at the earliest stages. Even flower-beds do all the better in proportion to the amount of heat from sunbeams stored up in them before the foliage keeps the heat out.—R. F.

TRADE CATALOGUE RECEIVED.

James Backhouse & Son, York.—*Catalogue of Stoves, Greenhouse, and Bedding Plants, Ferns, Alpines, &c.*

COVENT GARDEN MARKET.—JUNE 10.

Supplies continue very plentiful. Strawberries from the open ground have come in in greater quantity; and of new Potatoes heavy consignments have come to hand from Cornwall and abroad. Of old ones there is yet a very heavy stock, which day by day becomes more unsaleable.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	2	0	4	0	Melons each	4	0	10	0
Apricots pottle	0	0	0	0	Mulberries punnet	0	0	0	0
Cherries lb.	1	0	3	0	Nectarines doz.	12	0	24	0
Chestnuts bush.	14	0	20	0	Oranges 100	6	0	14	0
Currants, Red... ½ sieve	0	0	0	0	Peaches doz.	18	0	36	0
Black do.	0	0	0	0	Pears (Kitchen) ... doz.	0	0	0	0
Figs doz.	8	0	15	0	Pine Apples doz.	0	0	0	0
Filberts 100 lbs.	0	0	0	0	Pine Apples lb.	6	0	12	0
Cobs do.	50	0	60	0	Plums ½ sieve	0	0	0	0
Gooseberries ... ½ sieve	2	0	3	0	Quinces ½ sieve	0	0	0	0
Grapes, Hamburg lb.	5	0	10	0	Raspberries lb.	0	0	0	0
Muscats lb.	0	0	0	0	Strawberries lb.	3	0	10	0
Lemons 100	8	0	10	0	Walnuts bush.	14	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes each	0	4	0	6	Leeks bunch	0	3	0	6
Asparagus bundle	3	6	0	0	Lettuces per score	0	9	1	6
Beans Broad ½ sieve	4	0	0	0	Mushrooms pottle	1	0	2	6
Kidney 100	1	0	1	6	Must. & Cress, punnet	0	2	0	0
Beet, Red doz.	3	0	4	0	Onions bushel	5	0	7	0
Broccoli bundle	0	0	0	0	Onions pickling	0	6	0	8
Brussels Sprouts ½ sieve	0	0	0	0	Parsley ½ sieve	1	0	1	6
Cabbages doz.	1	0	2	0	Parsnips doz.	1	0	2	0
Capoteams 100	0	0	0	0	Peas quart	1	0	2	0
Carrots bunch	0	7	0	10	Potatoes bushel	2	6	4	0
Cauliflower doz.	4	0	8	0	New lb.	0	3	0	6
Celery bundle	2	0	3	0	Radishes doz. bunches	0	6	1	0
Cucumbers each	0	6	1	6	Rhubarb bundle	0	2	0	4
Pickling doz.	0	0	0	0	Savoy doz.	0	0	0	0
Endive score	2	6	3	0	Sea-kale basket	0	0	0	0
Fennel bunch	0	2	0	0	Spinach bushel	1	0	2	6
Garlic and Shallots, lb.	0	8	0	0	Tomatoes doz.	6	0	0	0
Herbs bunch	0	2	0	0	Turnips bunch	0	6	0	0
Horseradish ... bundle	2	6	4	0	Vegetable Marrows doz.	0	0	0	0

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

SEEDLING FUCHSIA (*George Benstead*).—A very fair Night-sepal variety with purplish corolla, but in the state in which it reached us no especial merit was discernible.

ROSE (*J. C. C.*).—It is, we believe, a Noisette Rose, and called *Ophir*; but the petals were all shed.

WORKS (*A Subscriber, Brighton*).—The common earth-worm is not injurious. Its casts disfigure the lawn. Lime-water, poured plentifully upon any spot, will effectually banish them from it.

FROTH INSECT (*Robert Proctor*).—It is so-called popularly, as it also is "Cuckoo-spit" and "Froth-hopper." Entomologists have named it *Tettigonia spumaria*. It is injurious to plants by extracting their sap. The froth is the insect's excrement. The quickest mode of destroying the insect is by the finger and thumb, but we think dusting them with Scotch snuff would incommode them.

RHODODENDRONS AT THE ROYAL BOTANIC GARDENS, REGENT'S PARK.—Allow me to correct an error which occurs in your Number of June 6th in your report of my Rhododendrons now exhibiting at the Regent's Park. You commence your notice "The Knap Hill plants at the Regent's Park," instead of which it ought to have been "The Bagshot plants, &c."—JOHN WATKINS.

INSECTS ON CHERRY AND CURRANT TREES (*An Amateur Gardener*).—If they are aphides syringe them with tobacco water.

SEEDY PEAS (R. W. Pogner).—The Peas we received from you May 26th, and which were selling in Tanton Market at 2s. 6d. per peck, were the earliest and best grown out of doors that we have tasted this year.

STOPPING VINE SHOOTS (A Young Pruner).—By allowing the terminal bud to produce three leaves you will repair a great portion of the injury you have done by pinching them back to the first leaf. As soon as the shoot has developed three leaves, pinch out the top of the shoots, the same as described in No. 218. As the Grapes are not in flower they will not be likely to receive so much injury as they otherwise would have done. By preserving the extra leaf above the bunch you will make up for the loss of the principal leaf that has been destroyed.

TREATMENT OF ESPALIER PEAR TREE (Idem).—As the Pear tree is making abundance of shoots, it is evident the roots are well at work. You may, therefore, treat it in a similar way to young trees as regards thinning the shoots and training, &c. Put plenty of litter about the tree, to prevent the drying sun and wind reaching the roots. We hope you have not planted it too deep. We strongly advocate planting all kinds of fruit trees as near the surface as possible. If planted deep you had better lift it in the autumn. It will do the tree good, by causing it to make double the quantity of fibrous roots.

SOWING CUCUMBERS—TWELVE FUCHSIAS—PEAS FOR AUGUST AND SEPTEMBER (J. B.).—Cucumbers from seed sown now would, if well attended to, come into use at the end of August, and bear until late if the bed were lined. *Sion House Improved* is a good late Cucumber, Lord Kenyon and Kirklees Hall Defiance are large and good. Fuchsias with white sepals: *Queen of Beauties*, *Minnie Banks*, *Schiller*, *Bridesmaid*, *Glady Girl*, and *Guiding Star*. If you mean by white Fuchsias those with white corollas, then *White Lady*, *Sanspareil*, *Bianca*, *Marie Corneliussen*, and *Henry Abts*. The best red: *Constellation*, *Comet*, *Marvellous*, *Universal*, *Cloth of Gold*, and *Shakespeare*. The best Peas to sow to come in in August and September are *Hair's Dwarf Mammoth*, *British Queen*, *No Plus Ultra*, and *Lord Raglan*, which should all be sown from fourteen to sixteen weeks before they are expected to come into use. *Bishop's Long-podded*, *Burbridge's Eclipse*, and others of the second early Peas may be sown now, and they will come in in twelve or fourteen weeks. The others may also be sown, but they will not come in at the time named.

BOOK (M. A.).—Bentham's "Handbook of the British Flora," will aid you. Its price is £3 10s.

MANURING ROSES (H. J. F.).—Mulching is not manuring. It is putting long dung or cocoa-nut fibre refuse on the soil's surface to keep it moist. Guano forms a liquid manure quite inoffensive, and you can have the guano in half-crown tins at our office.

ERRORS.—At p. 433, col. 2, l. 37 from the bottom, the names should be "*Adiantum capillus-Veneris*, *Asplenium marinum*, and *A. trichomanes*."

PLANTING THE WATER LILY (J. W.).—We consider April a good time to plant the *Nymphæas* when they are about to grow. We have planted from March to September, simply fastening a stone to the thick fleshy root, and then lowering this at the place desired. In this case the bottom was muddy clay. Where there was little mud we have fastened them to a thick sod with wire, and then lowered them at the place desired. Sometimes we have put them into shallow wide pots, fastening the thick fleshy root to a large stone placed on the pot, and also filled a shallow hamper with strong clay soil using the stone to fasten the root to, as in the case of a pot, and lowered these where wanted. All answered well. The greatest fault in planting is doing so in too shallow water. It should not be less than 1 foot 6 inches, nor more than 3 feet deep.

RAINFALL (R. Asquith).—1858 was a drier year than 1861; the total rainfall in that year at Chislewick was 15.78 inches, whilst the amount which fell in 1864 was 16.88 inches, or more than an inch of excess over the quantity registered in 1858.

PANSIES DECAYING (A Lady Subscriber, Kilkenny).—We think you have rather overdone them by planting them in old cow-dung and sand. If there is danger of losing the whole take the plants up and divide them into bits, and plant them in a shady place in light sandy loam until they recover themselves, and then you may plant out into richer soil. If you dislike this trouble, water with lime water.

GARDENER EMIGRATING (Gardener, Limerick).—We never accept the responsibility of recommending any place as desirable to emigrate to. Too much depends upon the emigrant's acquisitions and constitution, and of these we know nothing.

PACKING GRAPES (A. B.).—Have a box made 5 inches deep, and not more than 2 feet long, and 10 or 11 inches wide; put some tissue paper in the bottom, then place the box sloping before you. With the shoulders towards each side lay in the bunches in two rows, and do not place anything between them. When the box has been filled to the top lay in bunches up the centre, the shoulders of each towards the bottom, till the box is full; cover the whole with tissue paper, and on the lid of the box place a printed slip in large letters, "Hothouse Grapes, with special care." This is the advice of a first-rate fruiterer in Covent Garden Market. You can have the index for the volume by sending your direction and two postage stamps.

BRAIN CORAL—PETRIFIED MOSS.—"J. L." would be very much obliged if "E. B." who wrote "*Fern Habits*" in our Journal, would state where to get "brain coral," also where "petrified moss" is to be had.

NAMES OF PLANTS (F.).—It is *Eriophorum angustifolium*, or *Narrow-leaved Cotton Grass*. Country people use it for stuffing pillows, but the silky down becomes very brittle when quite dry. (T. T. Chesterfield).—Your evergreen shrub is *Kalmia latifolia*, a native of North America, and quite hardy.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending June 10th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun. 4	30.260	30.213	76	42	61	58½	S.W.	.00	Very fine throughout.
Mon. 5	30.306	30.272	78	56	62	60	W.	.00	Very fine, with hot sun; warm at night.
Tues. 6	30.294	30.245	82	49	63	60½	W.	.00	Hot and sultry; very hot; fine throughout.
Wed. 7	30.424	30.319	75	39	63½	60½	S.E.	.00	Heavy dew; overcast; hot sun; very fine.
Thurs. 8	30.406	30.226	79	45	64	60½	E.	.00	Heavy dew; very fine; hot; very fine at night.
Friday 9	30.344	30.257	85	46	64	61	E.	.01	Quite cloudless; very hot and dry; exceedingly fine.
Sat. 10	30.167	30.080	79	42	64	61½	N.W.	.00	Fine; overcast; very fine throughout. [cloudy]
Mean	30.314	30.280	79.14	45.57	63.07	60.35	.....	0.00	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE BATH AND WEST OF ENGLAND POULTRY SHOW.—JUNE 5-9TH.

THE annual meeting of this Society invariably enlists the warmest interest of those individuals who make the breeding of poultry at once a profitable and pleasing occupation. This year the Show took place at Hereford, and the attendance of visitors proved most satisfactory. One great feature favourable to the popularity of the Bath and West of England Society arises from the fact, that at this Show it is that the early chickens of the year first come into competition. To obtain a mastery on an occasion like this is, therefore, much coveted by our principal breeders, as present success is looked forward to as the herald of ready sale for all superfluous stock from the yards obtaining premiums at the Bath and West of England Exhibition, and at prices also the most remunerative to their respective owners. For these reasons alone poultry-breeders always look forward with great interest to the classes for chickens, and winning-pens are not unfrequently claimed at sums their owners had considered altogether prohibitory of sale. We know several instances have occurred in which chickens that have been thus claimed have secured the premiums at

peted until late in the season, when, as an inevitable consequence, they have been at length compelled to succumb to fresh rivals, whose powers have hitherto been uninjured by travelling and close confinement.

The general arrangements were most satisfactory, both as regards the poultry and also the Pigeons. They were exhibited all on one tier about breast high, excepting the Turkeys, Ducks, Geese, and Guinea-fowls. These latter species had commodious pens allotted to them on the grass, and the health and appearance of these birds proved this new arrangement a good one, and a decided improvement on previous plans. The area of the two tents, which were excellently ventilated, gave the most ample room for easy inspection, and the great numbers of visitors constantly passing through the poultry tents proved that at least there was no falling off as to popularity in respect to poultry, nor did the Pigeons appear less attractive than heretofore. It is almost needless to add that the comfort and well-being of the whole was as diligently seen to as could be desired; nor do we remember any show in which so few indifferent specimens were exhibited, and the condition of the birds generally was perfection also, so much so that not a solitary instance of ill-health could be met with. Singularly enough the entry of Spanish fowls nearly doubled as to number any other class in the Exhibition, and the quality of these birds throughout was most meritorious.

The Spanish Silver Cup was taken by a very first-class

from Mr. Jones, of Clifton, Viscountess Holmesdale's known and excellent pen being a very good second, and Beldon, of Yorkshire, being but little in the rear as third-taker. It is long since so superior and regular a class of fowls has been exhibited; and the first-prize Sweepstakes cock (Viscountess Holmesdale's), is also well worthy special mention. We cannot but congratulate the Bath West of England Society on this prominent improvement on former meetings in so aristocratic a breed of fowls. The class for "Coloured" *Dorkings* proved one of the most important in the Show. Here pen after pen was of the first order, and consequently the competition was general throughout a strong class. As many of our poultry fanciers anticipated, Viscountess Holmesdale exhibited some that place most of her ladyship's rivals far in the rear. Mr. Lane, of Bracknell, Berkshire, exhibited a wonderfully well-feathered, well-matched, and equally well-grown so far as size only is considered; but it should always be remembered that natural malformation of the legs is inadmissible. In this case one hen was fearfully "ck-kneed," and presented a striking instance of deformity, arising, most probably, from over-feeding as a hen, combined with want of sufficient exercise whilst a few weeks old. We mention this, as a hint to all breeders of heavy-weighted chickens, to give every facility for exercise during the first few weeks, and afterwards to use weight by excessive feeding when the bone becomes hardened and matured. It is thus that overmuch stress and anxiety to indulge the chickens of large breeds ends in self-wrought disappointment; and we add that our own experience proves, beyond question, parents whose formation is thus imperfect not unlikely have even wry-backed offspring.

Cochins we were not prepared for so perfect a display, we heard a great rivalry had existed to gain position at the great meeting. The competitors were evidently not far apart on their oars, but looking as alike as possible; and, absenting himself from exhibiting for some two years past, Mr. H. Tomlinson, of Birmingham, again took the position at the head of the prize list with a pen of all Buffs, as neat as they were excellent. Captain Lane, of Manchester, pushed in closely for a second place, Mr. Stephens, of Walsall, was not by any means a third. We were glad to see so plucky an exhibitor as Mr. J. H. Tomlinson, of Dublin, rewarded by success in wonderfully brawn White *Cochins*, Single (Buff) Sweepstakes *Cochin* an exceedingly neat specimen; and a pen of immense size *Turkeys*, that would excite the fondest anticipation of any gourmand who happened to cast eyes on them at Bath and West of England Show. Mr. Boyle, also Sister Isle, exhibited a first-prize pen of *Geese* that, as closely observed by a visitor, "seemed made expressly for working man with a numerous family." Visitors red this pen constantly, and they proved a feature of the show. Nor were Mr. Boyle's *Brahmas* less conspicuous, in a most spirited competition. We repeat we had to see old Ireland pulling up so strongly as she did of the most useful breeds; for this inevitably must lead to still greater attention and improvement, making Bull look to his colours in the friendly tournaments of poultry exhibitions.

Game fowls the show was very strong; and although neither, of Stonecrough, near Manchester, took, without question, every first prize, and thus of necessity the silver the best pen of Game fowls exhibited, it must not be supposed it was not well contested, or that extraordinary was wanting elsewhere. The *Hamburghs* were very strong were also the *Poland* fowls; and the *Bantams* were very praiseworthy. We regretted to find that a case of birds being exhibited as true chickens of 1885, evidently were first ushered into life considerably prior to Christmas last. They were very properly disapproved by the Judges; and we hope that in every case the like imposition is attempted, the same determination to stop to such practices will be at once adopted. Quite time that autumn-hatched chickens were put when shown as spring birds, and the custom of so is most reprehensible, and has been in somewhat of a practice until some parties seem to consider its salubrious its perfect excuse. It is quite time it were

done away with, and none but spring chickens held admissible.

In the Extra Variety class there was a good entry, a capital pen of Malays taking the lead, a pen of perfect Silky fowls second position, and a pen of excellent White Spanish fowls, exhibited by Mr. F. B. Pitman, the third prize. So great was the competition, however, that an extra third prize was here awarded to Mr. Beldon's White *Polands*, a very interesting group, and well shown.

In the *Pigeons* the competition was not only very keen indeed, but such as would render any meeting popular. Mr. A. Pintoleite, of Manchester, was the fortunate winner of the silver cup; and Mr. H. Yardley, of Birmingham, of the Society's silver medal as a second extra prize for *Pigeons*. The whole of the *Pigeon* classes were unusually good.

The weather was very fine, and the attendance a perfect success.

SPANISH.—First and Cup, E. Jones, Clifton. Second, Viscountess Holmesdale, Linton Park, Kent. Third, H. Beldon, Bagley, Yorkshire. Highly Commended, R. Wright, London; Capt. Heaton, Manchester; T. Bamfield, Clifton; T. Smith, Walsall.

DORKINGS (Coloured).—First, Cup, and Third, Viscountess Holmesdale. Second, J. K. Fowler, Aylesbury. Commended, J. Norman, Peasmarsh.

DORKINGS (White).—First and Second, H. Lingwood, Needham Market, Suffolk. Third, Rev. G. F. Hodson, North Petherton, Bridgewater.

COCHIN-CHINA (Coloured).—First, H. Tomlinson, Birmingham. Second, Capt. Heaton, Manchester. Third, J. Stephens, Walsall. Commended, H. Bates, Birmingham; H. Griffiths, Worcester.

COCHIN-CHINA (White).—First, F. W. Zurhorst, Donnybrook, Dublin. Second, W. Dawson, Hopton, Mirfield, Yorkshire. Third, R. Chase, Ballall Heath, Birmingham. Commended, G. Lamb, Compton, Wolverhampton.

GAME (White and Pile).—First, Cup, and Second, J. Fletcher, Stonecrough, Manchester. Third, S. Mathew, Stowmarket, Suffolk. Commended, T. Burgess, Whitchurch, Salop.

GAME (Black-breasted and other Reds).—First and Second, J. Fletcher, Manchester. Third, A. B. Dyas, Madeley, Salop. Highly Commended, H. Adney, Collumpton; Rev. G. S. Cruwys, Tiverton.

GAME (Duckwing and other Greys and Blues).—First, J. Fletcher, Manchester. Second, Rev. G. S. Cruwys, Tiverton. Third, S. Mathew, Stowmarket, Suffolk.

BRAHMA POOTRA.—First, E. W. Boyle, Dundrum, Dublin. Second, H. Lacy, Hebdon Bridge. Third, Mrs. Hargreaves, Reading. Highly Commended, J. Marfell, Hereford; E. Pigeon, Exeter; J. Hinton, Hinton, Bath; J. K. Fowler, Aylesbury.

HAMBURGERS (Golden-pencilled).—First, F. Pittis, jun., Newport, Isle of Wight. Second, J. E. Price, Hereford. Third, J. S. Maggs, Tetbury.

HAMBURGERS (Silver-pencilled).—First, Viscountess Holmesdale. Second, J. Holland, Worcester. Third, H. Beldon, Bingley.

HAMBURGERS (Golden-spangled).—First, A. K. Wood, Kendal. Second, W. Bayliss, Walsall. Third, T. Davies, Birmingham. Highly Commended, T. Davies; H. Beldon, Bingley.

HAMBURGERS (Silver-spangled).—First, H. Beldon, Bingley. Second, G. Whitcombe, Gloucester. Third, T. Davies, Newport, Monmouthshire. Highly Commended, W. Bowley, Cirencester.

POLANDS (Black with White Crests).—First and Third, H. Carter, Holmfirth, Yorkshire. Second and Highly Commended, T. P. Edwards, Lyndhurst.

POLANDS (Gold or Silver).—First and Second, H. Beldon, Bingley. Third, Mrs. Blay, Worcester.

ANY OTHER VARIETY.—First, Rev. A. G. Brooke, Rayton XI. Town, Salop (Malays). Second, R. H. Nicholas, Newport, Monmouthshire (Chinese Silks). Third, F. B. Pitman, Taunton (White spanish). Extra Third, H. Beldon, Bingley. Highly Commended, E. Pigeon, Exeter (La Flèche). Commended, Mrs. Haig, Lichfield (Magpie Tattlers); R. Tate, Leeds (Black Hamburgs).

DORKING CHICKENS.—First, Mrs. Barter, Plymouth. Second, Rev. G. F. Hodson, Bridgewater. Highly Commended, Mrs. Dunn, Hungerford.

GAME CHICKENS.—Second, H. Adney, Collumpton. First Prize withheld.

COCHIN-CHINA CHICKENS.—First, J. R. Rodbard, Wington, Somerset. Second, Rev. F. Taylor, Kirkby Lonsdale, Westmoreland. Highly Commended, F. W. Rust, Hastings; P. Cartwright, Oswestry. Commended, J. Shortness, Newcastle-on-Tyne.

SWEEPSTAKES.—GAME.—First and Second, J. Fletcher, Manchester. Third, F. Statter, Manchester. Commended, Rev. G. S. Cruwys, Tiverton.

SWEEPSTAKES.—SPANISH.—First, Viscountess Holmesdale. Second, R. Wright, London. Third, J. R. Rodbard, Wington, Somerset.

SWEEPSTAKES.—DORKING.—First, F. Statter, Manchester. Second, Viscountess Holmesdale. Third, C. Smith, Salisbury.

SWEEPSTAKES.—COCHIN-CHINA.—First, F. W. Zurhorst, Dublin. Second, E. A. Tudden, Whitchurch, Salop. Third, J. E. Price, Hereford. Highly Commended, W. Curwain, Cambridge. Commended, W. Bowley, Cirencester.

SWEEPSTAKES.—GAME BANTAMS.—First, E. Cambridge, Bristol. Second, S. Laing, jun., Bristol. Third, G. Manning, Springfield, Essex.

BANTAMS (Gold-laced).—First and Cup, Rev. G. S. Cruwys, Tiverton. Second Prize withheld.

BANTAMS (Silver-laced).—First, Rev. G. S. Cruwys. Second and Commended, E. Jones, Clifton.

BANTAMS (White and Black).—First, Rev. G. S. Cruwys. Second and Highly Commended, T. Davies, Newport, Monmouthshire. Commended, W. Draycott, Leicester.

BANTAMS (Any other Variety).—First, S. Ward, Chesterfield (Game). Second, J. Fletcher, Manchester (Game).

DUCKS (Aylesbury).—First and Cup, J. K. Fowler, Aylesbury. Second, W. C. N. Hughes D'Ailly, Reading.

DUCKS (Rouen).—First, A. Woods, Liverpool. Second, J. R. Rodbard, Wington, Somerset.

DUCKS (Any other Variety).—First, T. H. D. Bayly, Biggleswade, Beds. Second, T. C. Harrison, Hull (Brown Call). Commended, J. W. Kellaway, Merton, Isle of Wight (Black East Indian).

QUEEN.—First, R. W. Boyle, Dublin. Second, J. K. Fowler, Aylesbury.
TURKEYS.—First, F. W. Zurborst, Dublin. Second, C. Edwards, Wington, Somerset. Highly Commended, J. Norman, Pershore; J. K. Fowler, Aylesbury. Commended, Mrs. Dunn, Ingleswood, Hungerford.

GUINIA FOWLS.—First, Miss Worthcote, Exeter. Second, O. A. Young, Driffield, Yorkshire. Commended, Rev. M. Amphlett, Evesham; R. Tate, Leeds.

PIGEONS.

CARRIERS.—First and Second, A. Pintolette, Manchester.
TUMBLERS (Almond).—First and Second, A. Pintolette, Manchester.
TUMBLERS (Any other Variety).—First, A. Pintolette. Second, J. Percivall, Peckham. Commended, J. R. Robinson, Sunderland.

POWERS.—First, H. Yardley, Birmingham. Second, A. Pintolette. Highly Commended, J. R. Robinson, Sunderland.

ROCKS.—First, E. Pigeon, Lymington, Exeter. Second, T. D. Green, Saffron Walden, Essex.

JACOBIANS.—First, J. Percivall, Peckham. Second, C. Bulpin, Bridgewater.

FAIRTAILS.—First, J. R. Robinson, Sunderland. Second, H. Yardley, Birmingham.

OWLS.—First and Second, A. Pintolette. Highly Commended, E. Pigeon; H. Yardley.

TRUMPETERS.—First, J. R. Robinson. Second, C. Bulpin, Bridgewater.

BARBS.—First, J. R. Robinson. Second, A. Pintolette.

TURBOTS.—First, H. Yardley. Second and Commended, J. R. Robinson.

NUSS.—First and Second, Rev. A. G. Brooke, Ruyton XI. Towns, Salop.

DRACONS.—First and Highly Commended, H. Yardley. Second, J. Percivall, Peckham.

ARCHANGELS.—First and Second, H. Yardley.

ANY OTHER NEW OR DISTINCT VARIETY.—First, Extra Second, and Highly Commended, A. Pintolette. Second, H. Yardley.

PIGEON CUP, won by A. Pintolette with Five First and Six Second Prizes.

Mr. Charles Ballance, of Stanley House, Lower Clapton, and Mr. Edward Hewitt, of Eden Cottage, Sparkbrook, Birmingham, were Judges for poultry; and Dr. Cottle, of Cheltenham, and Mr. Harrison Weir, of London, were the Arbitrators for Pigeons.

BRENTWOOD EXHIBITION OF POULTRY AND PIGEONS.

It appears that for the last three years the Brentwood Poultry Exhibition has been in abeyance, but we can confidently assert that the whole of our experience does not call to mind any instance in which the entire collection at any poultry show was so perfect and complete throughout as at Brentwood Show just held. It would be no exaggeration to say that not even a single pen of indifferent birds was exhibited. We know a universal impression prevailed that the Bath and West of England Show at Hereford would prove a great drawback to the Brentwood meeting, but the results proved this altogether a misapprehension, although held simultaneously.

No doubt a very great assistance to the Brentwood entries arose from the fact that this Show continued open only a single day, whilst the one held at Hereford necessitated the birds being away from home for a week or more. This, combined with the fact that the premiums were about equal in point of money value, was all in favour of short imprisonment. The entries embraced most of our local poultry celebrities, even Ireland, Scotland, and most of our English counties being well represented. We may confidently add that we have seen exhibitions rejoicing in even a thousand entries not containing so many good birds as did the two hundred pens or so at Brentwood. Where all classes were so excellent it would be a most invidious task to enter into particularities, and we therefore refer our readers to the appended prize list, in which will be found very few blanks from any reputed yard among our poultry breeders.

We must not, however, conclude without a recognition of the excellent management of the Committee of everything connected with the Show, and rejoice to add, that the weather being propitious, a capital attendance ensued. The funds, therefore, are proportionably augmented. The birds were safely returned immediately after the Show without mistake or injury.

DORKINGS (Coloured).—First, Dr. Campbell, Brentwood. Second, G. Griggs, Romford. Third, H. Lingwood, Needham Market. Highly Commended, G. Griggs; Sir St. G. Gore, Bart., Wickworth; R. B. Postans; H. Lingwood.

DORKINGS (White or Silver Grey).—First and Second, Dr. Campbell, Brentwood.

SPANISH.—First, J. R. Rodbard, Wington, Bristol. Second, A. Heath, Aine, Wilt. Third, T. J. Bailey, Brentwood. Highly Commended, R. B. Postans, Brentwood. Commended, Mrs. Pattison, Maldon, Essex.

JAMES (Black-breasted and other Reds).—First and Second, S. Matthew, Stowmarket. Highly Commended, Hon. H. W. Fitzwilliam, Rotherham; Rev. F. Watson, Kew, London. Commended, Sir St. G. Gore, Bart., Wickworth.

GAME (Any other Colour).—First, S. Matthew, Stowmarket. Second, Sir St. G. Gore, Bart. Highly Commended, S. Matthew.

COCHINS (Buff).—First, P. W. Rust, Hastings. Second, H. Lingwood, Needham Market. Highly Commended, W. Mattingly, Chelmsford; H. Bates, Birmingham.

COCHINS (Any other colour).—First, R. J. Wood, Chorley. Second, F. W. Zurborst, Dublin. Highly Commended, W. Dawson, Yorkshire; Mrs. Seamons, Hartwell, Aylesbury.

BRAHMAS (Dark or Light).—First, J. Hinton, Hinton, near Bath. Second, J. Pares, Chertsey.

HAMBURGERS (Silver-pencilled).—First, Sir St. G. Gore, Bart., Wickworth. Second, T. J. Saltmarsh, Chelmsford. Highly Commended, D. Illingworth, Yorkshire.

HAMBURGERS (Gold-pencilled).—First, Sir St. G. Gore, Bart. Second, F. Pittis, jun., Isle of Wight. Highly Commended, F. Pittis. Commended, Rev. T. L. Fellowes, Aisle, Norfolk.

HAMBURGERS (Gold-spangled).—First, Sir St. G. Gore, Bart., Wickworth. Second, A. K. Wood, Westmoreland. Commended, H. Snushall, Walsby.

HAMBURGERS (Silver-spangled).—First, A. K. Wood, Westmoreland. Second, Sir St. G. Gore, Bart. Highly Commended, Rev. T. L. Fellowes, Norfolk.

POLISH (Any colour).—First, T. P. Edwards, Lyndhurst. Second, J. Hinton, Hinton, near Bath. Commended, T. P. Edwards.

GAME BANTAMS (Black-breasted and other Reds).—First, Sir St. G. Gore, Bart. Second, Rev. G. Raynor, Brentwood. Highly Commended, G. Manning, Essex; J. Munn, Manchester. Commended, G. Manning.

GAME BANTAMS (Any other colour).—First, Rev. G. Raynor, Brentwood. Second, Withheld.

BANTAMS (Black or White).—First, F. Pittis, jun., Isle of Wight. Second, Sir St. G. Gore, Bart. Highly Commended, Mrs. Hill, Warley, Essex.

BANTAMS (Any other variety).—First, G. Manning, Essex. Second, G. Griggs, Romford.

ANY OTHER DISTINCT VARIETY.—First, J. Hinton, Hinton, near Bath. Second, Withheld.

TURKEYS (Any colour).—First, J. S. Lecher, South Weald. Second, C. Squier, Essex.

GEES (Any colour).—First, R. B. Postans, Brentwood. Second, J. S. Lecher, South Weald.

DUCKS (White).—First and Second, Mrs. Seamons, Aylesbury. Commended, C. Bamford, Cambridge.

DUCKS (Rouen).—First, C. Panchard, Suffolk. Second, Sir St. G. Gore, Bart.

SWEETSTAKES.—*Game Cocks (Any colour).*—First, Sir St. G. Gore, Bart. Second, W. Rogers, Suffolk. Third, H. J. Bush, Brentwood. Highly Commended, S. Matthew, Stowmarket. *Game Bantam Cocks (Any colour).*—First, Rev. G. Raynor, Brentwood. Second, Dr. Campbell. Third, G. Manning, Essex. Highly Commended, T. J. Saltmarsh, Chelmsford.

Pigeons.—*Carriers (Any colour).*—First, H. Yardley, Birmingham. Second, W. Massey, Yorkshire. Highly Commended, E. E. M. Boyds, Ashby-de-la-Zouch. *Powers (Any colour).*—First, F. Dimsey, Essex. Second, H. Yardley, Birmingham. Highly Commended, E. E. M. Boyds, Ashby-de-la-Zouch. *Almond Tumblers.*—First, W. Massey, Yorkshire. Second, H. Yardley, Birmingham. *Any other Variety.*—First, H. Yardley, Birmingham. Second, H. W. Hall, Croydon. Highly Commended, E. E. M. Boyds; H. Snushall, Walsby.

PRIZES.—First, J. Riley.

CANARIES.—First, J. Cook.

RABBITS.—*Lop-eared Buck.*—First, E. E. M. Boyds, Ashby-de-la-Zouch. *Lop-eared Doe.*—First, E. Lawrence, Essex. *Harefoot of any kind.*—First, E. E. M. Boyds. *Extra.*—Highly Commended, Miss N. Hamilton.

Mr. Edward Hewitt, of Sparkbrook, Birmingham, officiated as Arbitrator.

PIGEONS AND ROOKS.

"HAMBURG'S" letter has set me thinking and inquiring further into the subject of the supposed alarm felt by Pigeons at the nearness of Rooks, and the consequent desertion of the Pigeons from their houses. My Pigeons, Tumblers and Powers, show no such alarm, not even yesterday, when we shot upwards of a hundred Rooks. My neighbour at the farm, who lives as near to another part of the rookery, always has a good number of dove-house Pigeons, in spite of an annual domestic shooting-match. Then, six miles from me is a rookery remarkable for being established on trees of very low growth. It is on one side of the house, and on the other side many Pigeons are kept for table purposes. Here, then, are three cases in point on my side of the question. What say any other of our writers or readers? From all birds of the hawk tribe Pigeons would instinctively flee; but I doubt much if they would flee from Rooks, who would neither fight them nor eat them.

Then, in regard to pole-houses. They are, if well made, undoubtedly very pretty objects, and may also be constructed on a roomy plan; but I think if "HAMBURG" gave the Pigeons the choice of a loft or a pole-house he would find the loft exclusively used as a domicile. Some years ago I was consulted by a lady very fond of her flight of Jacobins. She was building new stable-offices, and wished to place her Pigeons in comfortable quarters, but could not give them a loft. On my suggestion she had a series of holes made in the brickwork of the south front of her hayloft, and landing-boards placed outside of a good depth and well-divided. Inside I planned, in deal, lockers of the depth from the front

of 1½ to 2 feet, and each opening at the back like a cupboard, the back being in fact a number of doors. This arrangement enabled her to catch her Pigeons, inspect the nests, and have all cleaned out easily, besides making a safe and comfortable home for the birds, taking up little room. I usually see landing-boards not half so wide as they ought to be, for Pigeons want a good broad space upon which to alight, coo upon, and sun themselves—a mere ledge is a miserable shift, and sometimes the Pigeons have not height either. I have also found that the owners have been unable to paint their pole-houses or repair them lest they should drive away the birds; yet certainly they ought to be painted every spring. Would any of our lady readers who draw well give us a sketch of a pretty and commodious house on a pole?—**WILTSHIRE RECTOR.**

HIVES WITH ENTRANCES AT TOP.

WHEN I saw the letter at page 352 with my name in it I was as much surprised as my Renfrewshire friend must have been amused, and I am glad he has given me this opportunity of rectifying a mistake—a mistake I had not the least intention should be made—viz., that of the letter appearing in my name instead of that of Mr. C. Williams, for whom I wrote it. Not but that I should have been very proud of the honour of bringing before the public the utility of this kind of hive; the advantage over the entrance at bottom I leave for any apianian to judge.

In the first place, the bees entering their hives at top invariably enjoy good health, as they have a constant supply of fresh air penetrating thoroughly among them without a cold draught on the brood, as the air must have the chill taken off it after passing through the bulk of bees before it reaches the bottom. When the entrance is at the bottom the brood is entirely exposed to the cold air, without the same chances of its becoming warm, for it can never ascend so long as the air above it is warmer. 2ndly, The honey keeps better in the cold dry air. 3rdly, The bees have not so far to carry it, besides having the advantage of carrying it down-hill instead of up. 4thly, More bees can be spared to collect when a swarm is put into a new hive. 5thly, After filling the stock hive they have only half the distance to carry the honey to the supers. 6thly, Bees kept in these hives never suffer from damp, which is the plague of an apiary, as it invariably finds egress in the shape of steam. When the entrance is at the bottom the vapour condenses on the sides, and runs out in streams of water, especially when the hives are very strong, and the nights are a little cool. Huish, in his work on bees, published in 1817, page 72, tells us that hives with a flat top for storifying are on an erroneous plan, and that it is the rock on which the partisans of the storifying system have been wrecked, because, he says, "The bees when in health never vent any excrement in the hive, and being never benumbed, they continually consume their food, and, consequently, evacuate by a considerable perspiration, which rises in vapour to the top of the hive, and in winter these vapours are almost continual, and it is proper they should be carried off without falling upon the bees." Again, at page 74, he asks, "What is the most common cause of the loss of the hives during winter?" "I do not speak of hunger, for that is the fault of the proprietor, but I maintain it is the moisture of the combs, occasioned by the fall of the water collected at the top of the hives, which are flat; it is also the fall of these waters on the bees which, stopping their perspiration, sours and corrupts the matters which are in their body, causing the dysentery, and carrying infection and death through the whole community."

How far these vapours tend to promote dysentery I cannot say, as Mr. Williams assures me that since he has invented this hive he has never had any disease in his apiary, or lost a single hive, although he has kept the same from seven to eighteen years before disposing of them. I have one that I purchased from him that is now upwards of twenty years old; and with all due deference to the critical acumen of the "RENFREWSHIRE BEE-KEEPER," I am still obstinate enough to maintain my original opinion; and without more substantial objections than he brings forward to convince me of the uselessness of entrances at the top, I never intend

to keep a hive with the entrance at bottom in my apiary a season longer than I can possibly help. I must say the trial he gave them was certainly a very good one, for he could not have made their entrance much nearer the top, situated as he was, without making them go down the chimney; and the result of his experiment was equally satisfactory, as he tells us in one breath the plan succeeded so well, that the very first season he took from two hives a half-hundredweight of beautiful honey, and almost in the next contradicts himself, and tells us that he most reluctantly abandoned bee-keeping in high latitudes, under the impression that hives with entrances at the top have to the inexperienced only novelty to recommend them. I am glad he is candid enough to tell us it was his inexperience in dealing with them in that position that led him to abandon them; at the same time he should not have complained of his tools.

Before I conclude, I feel that I am bound to answer the only objection to Mr. Williams's hives—viz., the difficulty of the bees cleaning them; and in reply would ask, whether at any season of the year there is more carried into the hive than out of it? And I have no hesitation in saying that there is five hundred times more carried into the hive than has to be carried out, even if the bottoms are never cleaned. Then supposing the entrance to be at the bottom, the bees have five hundred loads to carry up-hill to one they carry down or on the level. If, on the contrary, the entrance is at the top, they will have five hundred loads to carry down-hill to one up, and the advantage then is very manifest. When an apianian cleans the bottom board four times a-year the bees will have very little to do in that way. I trust I have shown some few of the advantages of this hive without displaying any acrimony to my Renfrewshire friend.—**HENRY STUTTLE, Kingsland, Shrewsbury.**

FOUL BROOD INCURABLE BY EXCISION.

IN the detailed report of my experience of "foul brood," in No. 149, I showed how the excision of the entire brood in my stocks signally failed to effect a cure, the disease breaking out in all its virulence in the new-formed portions of comb. These stocks without exception died out during the winter, although well found in store.

With the view of aiding me as much as possible in rebuilding my shipwrecked apiary, "A DEVONSHIRE BEE-KEEPER," in the kindest manner sent me last April twelve months his strongest Ligurian stock, and although it lost upwards of five thousand of its population on the journey, speedily recruited, and appeared quite healthy. With the assistance of abundance of black bees bought in, and new hives, I had by the month of July, in addition to my black stocks, been successful in establishing six fine colonies with most prolific Ligurian queens at their head.

I was quite appalled in the beginning of August to find foul brood unmistakeably present, not only in the original stock, but in four of the young hives. I was successful in effecting a thorough cure of the population of the old stock, by passing them twice through the "purgatorial process," then introducing them into the combs of a good second hive, from which the black bees had been previously removed. The queen bred well at the end of the season, but unfortunately died during the winter. I lost one of the young queens from the continuous confinement necessary to effect a cure, a second from being neglected by the black bees to which I purposed introducing her, and a third from being totally deserted in my absence by her new subjects, while caged, they preferring to transfer their allegiance from the Italian to the black monarch of the adjoining stock, so that this spring found me with only two Ligurian queens, the one presiding over a particularly strong healthy colony, in a set of Stewarton boxes, the other over a square straw frame-hive.

The traces of foul brood in the last-mentioned hive were so slight, that I resolved to let it stand unmolested over the winter in the hope that the long cessation from breeding might tend to alleviate, if not stay, the plague, but finding in the spring the fresh brood grouped all round the suspicious, I feared it might thereby be contaminated, and as already mentioned in my remarks, on "The Opening Sea-

son," in No. 209, I cut out the entire brood, good as well as bad, shifting the frames so operated on to one side, and bringing to the centre as many of the white pure combs of the side never bred in. In the month of April I examined the hive, and was mortified to find foul brood still present, I therefore on the 27th of that month, brimstoned the workers, and was fortunate in safely introducing their queen to a good black colony.

My object in writing the above, in addition to establishing that the taint of this disease lurks in the combs of a colony, even after the cessation of breeding during winter, and that it will break out in even the otherwise pure combs in spring, is, that should the opinion of your talented contributor, Mr. Lowe, be unchanged, I would be most happy on receiving his address through the Editors, to present him with the frame-hive above alluded to, in the hope that were he to have a swarm therein, he might be enabled to study the evolution of the pupæ, and possibly from his thorough scientific acquaintanceship with the honey bee, throw a flood of light on this singular malady, alike the deepest mystery and most terrible bane to many an apiarian reader of the Journal," as well as to—A RENFREWSHIRE BEE-KEEPER.

NOTES AND QUERIES ABOUT QUEENS.

I HAVE read with interest the account of the death of a queen related by "J. M. W." in page 392. On the 4th of April he said he fed with pieces of honeycomb through the day, a practice which I am sure the initiated would at once see was wrong; but I know it is done by many in our own neighbourhood, even after being warned to desist; and although there is nothing that gives me greater pleasure than to see my neighbours' hives prosper, still in this case I should not be sorry to hear of their losing their whole stock, as it would then give peace to others for miles around. What can be more evident than that his queen, as is too often the case, had been expelled by robbers? At all events there is something mysterious in his case, for from the time of the expulsion of the queen there are only twenty-two days—not sufficient time for a virgin queen to commence egg-laying, taking his own statement that there was drone brood in all stages, which shows there must have been eggs laid from the 4th till the 22nd. Is he sure that it was drone brood, and a different queen from the one he saw on the 4th? I do not think that two mothers would be allowed to live together in the hive, even for a few days, during winter (the longest period I ever knew being fifty hours), which must have been the case if there was a mother ready to lay eggs the same day that the old one was expelled. Besides, queens appear much smaller after death.

Can any of your correspondents say at what age a queen whose impregnation has been retarded will commence egg-laying? I fully intended to have proved it this spring, as I had queens hatched in the beginning of April, and kept them twenty-three days, but I required the bees and had to kill them ere my end was accomplished.—A LANARKSHIRE BEE-KEEPER.

P.S.—May I be allowed to ask Mr. Henry Stuttle what particular merit is in his hive when, as he says, last year was the only fortunate one he has had in getting off clean supers? When such a year presents itself we are in no difficulty in getting clean combs, even in an old hat or such like. If he would take a trip northwards in but an indifferent year, we could show him something that would dazzle his eyes, and ventilated in a very different manner from the way he describes. I tried the plan he recommends seventeen years ago, and was glad to give it up in seventeen days—nay, I went further, and tried seven different places of entrance.

SPONTANEOUS UNION OF SWARMS.

In the beginning of last week I sent one of Mr. Williams' straw hives with entrance at the top, to a friend of mine, who had promised me one of his first swarms. On Saturday last, May 20th, he had three swarms from three common straw hives; the first one he hived in my hive, and left it in the place they knit; the other two he hived in two common straw hives, also leaving them where they knit, apparently all right, and all satisfied with their quarters. But

in about half an hour after hiving the last swarm, he was informed by one of his family that the bees were swarming again. Upon proceeding to the apiary, he was surprised to see No. 1 swarm leaving its hive, and going straight into my hive very peaceably, and in a very short time they were as comfortable as if there had been only one swarm in the hive. But now comes the most remarkable part of the case. In about an hour afterwards, looking how things were going on, he was much surprised to find that No. 2 swarm had also taken a fancy to my hive, and were migrating with all possible dispatch, and comfortably ensconcing themselves with the two first swarms, making a total of three distinct swarms in my hive, each of which was a very good swarm. The weight of bees including the hive was 23½ lbs. and as the hive weighs 11 lbs., the weight of the bees was 12½ lbs. Such a mass in one hive I have never seen before—in fact, they are so thick in the hive, which is very large, that some cluster on the outside at night, and I am obliged to use the entrance at bottom as well as top.

Not knowing what will be their next proceeding, as in all my experience I have never had, nor known three first swarms joined together, I have taken the liberty of acquainting you with this remarkable event. At present they are working as nicely and as amicably as I have ever seen any bees do, and I should fancy they must fill the hive with comb in the course of three days more, as they appear to work in proportion to their strength.

The address of the gentleman who gave me the bees is Mr. Jones, Borneo Farm, near Shrewsbury.—HENRY STUTTLE, Kingsland, Shrewsbury.

[We shall be glad to know how this monster colony prospers.]

OUR LETTER BOX.

BEES SWALLOWING WITH DIFFICULTY (A. Wood).—Your bees have sore, probably ulcerated, throats, arising from a disordered state of body—change their food. Discontinue all whole corn; give them ground oats, or oatmeal slaked with water, and in an almost liquid state. Instead of vegetables, give them large sods of growing grass, which they will readily eat, earth and all. They will then recover.

HAMBURGS WITH PALE FACES (Idem).—It may be that your Hamburgs are about to moult, having finished their laying. If so, dying combs and pale faces are the natural symptoms and precursors. If that is not the case we advise you to treat them as above.

"A COUNTRY PARSON" will be answered in our next.

HOW TO TELL A COCK FROM A HEN PIGEON (P. A. L.).—In young Pigeons in the nest the larger, thicker-beaked, wider-headed, and wider-winged is considered to be the cock, but they are frequently both of one sex. After they leave the nest, until they are matchable, it is almost impossible to tell. When arrived at maturity the cock is thicker about the beak, head, and neck; he has a bolder look. The hen is narrower, and more slender and timid-looking. As to manner, the cock is more interfering, coting to all other Pigeons, bowing and sweeping after them with his spread tail. He will clap his wings more as he flies, and sometimes raises them as he stands on the house top.—B. P. B.

BEES WITH EXTRA ANTENNÆ (Bee Friend).—The supposed extra antennæ are, in reality, pollen-masses from some species of orchis which have become firmly attached to the heads of these unfortunate bees by the glutinous secretion at their bases. This singular provision of nature for the formation of the blossoms of the orchidaceous tribe of plants was first noticed and fully described by Mr. Charles Darwin in his interesting work on the fertilisation of orchids.

BEES CLUSTERING OUTSIDE THE HIVES (W. C.).—We should at once proceed to make artificial swarms. The simplest and best mode of effecting this operation with stocks in common straw hives was fully described by Mr. Woodbury in No. 161 of our new series.

MOVING BEES (Beriah).—The best mode of preparing bees in a frame-hive for a long journey is by tacking a square of perforated zinc over the top in the place of the crown-board, which latter should be raised half or three-quarters of an inch, and kept in that position by the insertion of four small wooden blocks, screws of extra length being substituted, if necessary, for those in ordinary use. The entrance being also secured with perforated zinc, the floor-board screwed on, and the hive well corded, it will bear removal to almost any distance if not too roughly treated. We should, however, prefer taking it under our own care to entrusting it to the chapter of accidents in the furniture-van.

LONDON MARKETS.—JUNE 12.

POULTRY.

A short supply and a good trade combine to keep up prices. We must, however, look for lower quotations.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	3	6	4	0	Grouse	0	6	0	0
Smaller do.	3	0	3	6	Partridges	0	0	0	0
Chickens	2	0	2	6	Hares	0	0	0	0
Green Geese	6	0	6	6	Rabbits	1	4	1	3
Ducklings	3	0	3	6	Wild do.	0	8	0	9
Guinea Fowl	0	0	0	0	Pigeons	0	8	0	9

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JUNE 20—26, 1885.	Average Temperature near London.			Rain in last 18 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
20	Tu	QUEEN VICTORIA, AGESSE, 1837.	72.1	49.1	60.6	18	44 43	18 48	47 1	4 5	27	1 13	171
21	W	QU. VICR. PROCLAIMED. Longest	73.8	51.0	62.4	16	45 3	18 8	28 2	13 6	24	1 26	172
22	Th	Sun's declination 21° 27' N. [Day.	73.4	49.5	61.5	16	45 3	19 8	17 3	13 7	29	1 39	173
23	F	Forsydia flowers.	72.3	47.3	59.8	15	45 3	19 8	14 4	4 8	29	1 53	174
24	S	MIDS. DAY. NAT. JOHN BAPTIST.	73.8	49.5	61.5	15	45 3	19 8	17 5	47 8	1	2 5	175
25	SUN	2 SUNDAY AFTER TRINITY.	72.7	49.6	61.1	19	46 3	19 8	24 6	22 9	2	2 18	176
26	M	St. John's Wort flowers.	73.8	50.2	62.0	19	46 3	19 8	31 7	52 9	3	2 31	177

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 73.1°, and its night temperature 49.4°. The greatest heat was 93° on the 22nd, 1846; and the lowest cold, 35°, on the 28rd, 1851. The greatest fall of rain was 0.73 inch.

THE MODERN PEACH-PRUNER.

No. 11.

THEORY OF LONG PRUNING.



THE object of all pruning is not to increase the vigour of the entire tree, but to control and modify that vigour, and so accelerate and regulate the fruiting period. Pruning, conjointly with appropriate training, claims to be able to add to the longevity of fruit trees. This is effected by balancing the separate parts. More

than this ought not to be expected from any system of pruning. This, to be successful, must be based on an accurate knowledge of the habits of each kind, which knowledge is the result of observation and experience. It is here that the recorded opinions of men eminent in their profession are valuable; for, though the Peach tree adapts itself to many varying conditions of culture, there are certain principles which should be ever kept in mind.

Those who have seen the Peach-orchards of the south of Europe, and of America, know how little care is generally bestowed on them beyond manuring the roots. In these favourable climates standards, three years old are laden with fruit. They bear thus, exhaust themselves, and decay, without more than a casual attention being paid to them. This is culture reduced to its simplest elements; but even in such cases experience has shown the value of some kind of pruning. This, according to Downing, consist in cutting out one-half of the shoots of last year's growth. The crop is diminished by one-half, but the size of the remainder is doubled. In the more northern states espalier training is in vogue, requiring far more care. The attention paid to Peach culture in northern and mid-France equals that required in England. Superb fruit is grown in America in nearly every part, but, in France, only where scientific training is employed; for the standard-grown Peaches of the southern districts are valueless. In England, therefore, it is useless to expect success without labour and skill, and foreigners do well to admire the great results produced under such difficult conditions.

No one can now reasonably doubt the immense boon which the introduction of orchard-houses has been to lovers of the Peach. We, who are conversant with the best productions of foreign climates, know that fruit grown in well-managed orchard-houses is literally unequalled; but to do this is not in the power of every one. To simplify, then, as much as possible the process of learning must be our object, and no system, however sound, can be really useful if it be complicated. For this reason alone more than one excellent teacher has failed.

Peach culture is not really difficult to practise; it may become so by injudicious treatment. When we read the

No. 221.—VOL. VIII., NEW SERIES.

works of the best writers on this subject we cannot fail to see how simple the whole process seemed to be to the minds of some of them. In several the whole instruction for the summer and winter is contained in a dozen lines. To keep the roots well drained, to lay in a good supply of bearing wood, to remove that which had fruited, and not to shorten-in too much, were almost the only injunctions given. No indications were thought necessary by which the amateur could distinguish the various classes of shoots; some vague and general directions as to disbudding were added. It is evident that instructions of this brief and general nature presupposed a larger acquaintance with the subject than usually occurs with amateurs, and, being unaccompanied by illustrations, they, though written by first-class growers, failed to teach much. On the other hand, in such a plain matter as pruning the Peach, it is really absurd to attempt to teach it by elaborate and complicated rules. Much of the present style is of this kind (especially on the continent), and, on this account, will never be acceptable to English gardeners. The excessively-long pruning practised in the days of our fathers was, however, almost as pedantic and as strange to read of now. Here we find the traditional "good supply of young shoots, and thinning out the old and unproductive ones as soon as they appear naked," &c. Then comes the direction to lay in the "shoots of medium size, and full of flower-buds, at full length, from 2 to 3 inches apart." "All forerights and supernumeraries to be rubbed off during the summer months, as soon as they have-reached an inch in length." In this case no cluster-spurs could be retained, and it is evident that, there being no mention of disbudding in this case, the long shoots, laid in closely, must have crowded the tree, and caused much overgrowth. What the tree must have looked like at the winter pruning it is impossible to say. Other later writers of eminence recommend the shoots to be shortened to 14 inches, if strong, and weak shoots to about 6. At Montreuil about 12 inches, in general, is the rule as to length of shoot.

The unnatural and needless system of disbudding seems to have many advocates in the authors before us. Indeed, with one author it constitutes the chief part of his recommendations. To lay in a shoot (the length not stated), but evidently at its fullest extent, and to disbud it in three times—(there is great stress laid upon this number)—to leave only the terminal bud, and one at the base—(for a replacing shoot)—and to allow one or more Peaches to grow on the naked shoot between them, is really the whole that is stated. Another writer considers disbudding a "most important consideration." It will, however, be seen that later practice prefers the judicious summer stopping of the shoot, whereby the same result is obtainable by more simple and natural means.

The result of such a style of long pruning almost always is, that far more wood is grown than is wanted. The tree exhausts itself, especially in our humid climate, in the production of long unripened shoots, and the pruner, at the winter season, sees before him three times as much wood as he requires for fruiting. If he be one

No. 873.—VOL. XXXIII., OLD SERIES.

of the traditional school, opposed to every change, he proceeds to cut out, perhaps, two-thirds of the superfluous shoots, thereby rendering the tree liable to canker, and he has no choice left but to preserve the remainder, which, from the confusion and crowding of the past summer, are often unfit to bear. This may be an extreme case, but whenever a sunless summer occurs any similar system must fail. "The cautions," says McEwen, "given as to laying-in reserve shoots have done much injury; the vast amount of unnecessary wood laid in prevents the proper expansion of the leaves, or the action of the sun on the walls. Reserved shoots are only 'reserved' to be cut out, and green shoots, soft at the core, are the result, and a prey to a thousand diseases. This is smothering the tree with superfluous wood." And to the same purpose his Editor—"Over-cropping with wood is as injurious as over-cropping with fruit; both shorten the existence of trees." Much more might be added, but it is needless. In short it may be taken as certain that the system of long pruning tends to produce too much wood; that such wood is not fruitful, not having had its due share of our capricious sunshine; that the amputations of shoots and branches, rendered necessary for a "fresh supply," are dangerous in the extreme, and that the trees are extremely liable to become bare at the centre. If to this be added the injudicious forms of trees, and undrained borders, every failure seems easy of explanation.

It remains to suggest some remedy. All late experience tends in one direction—closer pruning. The results which have been obtained in the orchard-house, under very close pruning, serve to show that this system, when modified so as to suit the exigencies of the open air, contains within it the germ of a new style. Could this be made to suit, both for trees under glass and for those on the open wall, no doubt a great step would thereby be made towards uniformity and simplicity. Ten years of experiments made on trees in the open air have shown that this is possible.

"The Modern Peach Pruner" does not favour long pruning, but as, when properly practised, it may be rendered sufficiently successful, the ensuing chapter will contain what is considered the best method of so doing. The remaining chapters will be devoted to close pruning, and especially to describing an entirely new system of managing Peach trees on the open wall.—T. BRÉHAUT, *Richmond House, Guernsey.*

KITCHEN GARDENING.

(Continued from page 432.)

HAVING thus far treated on light and dry soils, our next consideration will be those of a wet clayey nature, which are, generally speaking, the worst kinds of soil for a garden. The first thing to be done is to see that the ground is thoroughly drained, and then to trench it two spits deep all over; but instead of throwing the top soil in the bottom of the trench as is usually done, merely turn it back, and fork the bottom of the trench, replacing the top soil on the surface. As the trenching goes on have all manner of rubbish that can be procured wheeled into the trench. In fact, I always dispose of my rubbish-heap in that way, and the longer the manure is the better it will answer the purpose. It also frequently happens, that in consequence of a railway being made, or building going on adjacent to the garden, a good lot of cheap soil can be obtained and worked in to improve the natural soil. Road scrapings, lime rubbish, or anything that will lighten the soil should likewise be taken advantage of, not forgetting to manure well every time the ground is cropped. This system, if persevered in, will make the ground work well and produce earlier crops, which are great considerations as well to the amateur as to the market gardener.

Having thus far disposed of soils and the different systems of working them, I shall, as well as I am able, describe my system of cultivation and cropping, so as to maintain a good supply of vegetables and salads all the year round, hoping that my readers will not forget that it is of a small garden I am writing, and for men who take an interest in such.

Beginning with January, my supply of vegetables consists of Brussels Sprouts, Savoy, Coleworts, or Hardy Greens and Kale of sorts, with a good breadth of Winter Spinach. For saladings I generally depend upon such as Mustard and

Cress, Endive, &c., under protection, the Celery being protected where it grows. The first lot of Rhubarb and Sea-kale is in by this time. The above is about all I can muster at that time of the year. As early as possible in the month I sow my first lot of Peas, Daniel O'Rourke, having previously selected and prepared a piece of ground on the border lying under the wall; and as a protection against mice below and birds above, I cut up a quantity of furze very small, and put in the drills with the seed, laying some more along the top in rather longer pieces. I do not find that the furze has any injurious effect on the future growth of the crop, and it acts as a very good preventive from all the ills that early-sown Peas are subject to.

While on the subject of Pea-sowing, perhaps I may be allowed to say a word or two about some new sorts that have rather put me out of my reckoning this year. My seedsmen sent me a quart each of two sorts called Dickson's Early and Carter's First Crop. I sowed them exactly five weeks after Daniel O'Rourke, and under exactly the same circumstances. The two new sorts were fit to pick on the 26th of May, whilst Daniel O'Rourke was not ready till the 1st of June, and was not then in nearly such good condition when it was picked as the first-mentioned sorts, as the pods of these were as hard and full as any one could desire.

Before the month is out I sow two rows of Sangster's No. 1 in the open quarters, at 5 feet apart, thus leaving room for a trench in which to plant the thinnings of the Cauliflowers under hand-lights, which are succeeded in the trench by Celery. If the ground is at all in working condition, I plant some Potatoes in the open ground before the end of the month, well covering them with litter, though I have some planted at the same time in a three-light pit, putting the sets in deep, and sowing Radishes on the top. I very seldom sow any Lettuce in January as I have a good sort to stand the severity of the weather, called the White Cos, and if I can possibly get a piece of ground clear of winter stuff, I sow it with Early Longpod Beans. This month I generally cover up my second lot of Sea-kale and Rhubarb, for forcing under pots in the ground, as I can do better with it in that way than in any other, I also take the opportunity of wheeling any manure in the garden to any available place where there is room, among the growing crops of winter stuff, and on the borders. I prune the fruit trees and have the borders neatly dug, and as soon as a piece of ground is done with I trench it or ridge it at once, as it will not do to lose the pulverising effect of the frosty weather on the land. If any new plantations are in contemplation, it is a good plan to prepare for them before the busy season comes on, as January is about the slackest month of the year in the kitchen garden.—BUENTWOOD, P.D.

(To be continued.)

LIQUID MANURE.

(Continued from page 427.)

HOUSE-SEWAGE AND URINALS.—The manure from these sources is more powerful than the drainings of dunghills, but is not suitable for pot plants, and such as require frequent applications of water. For fruit trees and garden crops generally it will be found more powerful, more stimulating, and more certain in its action than the drainings of a dunghill.

The tank for the reception of house-sewage should be at a distance from the house, and no place is better than a covered shed, where earth can be dried for the deodorisation of the more solid matter. There should be a place where this can be separated from the fluid, and at such a height that the latter may run off after a short time. This receptacle need not be either deep or large, but sufficient to hold the sewage and allow of the solid matter settling. It should be cleaned out once a week, and the deposit mixed with dry soil. For this purpose soil is far preferable to ashes, and charcoal or peat is better than either. This solid manure is more stimulating than the dung of animals, but is not so lasting. It is not necessary to separate the solid from the liquid house-sewage, but if this is not done fermentation soon takes place, and the tank must be more frequently emptied, whilst it is hardly possible to use the contents without some disinfectant: besides, if the solid

matters are not separated from the fluid it is very difficult to judge of the strength. Cesspool sewage, when the solid matters are for the most part removed, should be diluted with fully six times its volume of water. On the other hand, when no part of the solid matter is removed, twelve times the bulk of water is not too much. In all cases the contents of the tank should be stirred to the very bottom. This liquid may be poured between the rows of growing crops, but not until the crop, whatever it be, is well rooted.

MIXED SEWAGE from household offices, stables, &c., is highly fertilising. It is usual for the water from the laundry and rain to enter the tanks. Sometimes the sewage is very strong, at others weak, and it is difficult to judge of its strength. Sometimes it may be used undiluted, being little better than so much soapy or greasy water; at others it requires to be much diluted, and this is the greatest drawback to its use, as there is ever a danger of applying it too strong.

I have now stated the three forms in which I have used liquid manure, and I have had three times as much experience with the first as the other two. I have not, in fact, used house-sewage or manure water containing it to other than the common kinds of plants, and for fruit and vegetable growing, and to these it has been applied with advantage. In using liquid manure give a thorough soaking, and at distant intervals. In the case of stone fruit trees a good drenching after the fruit is set enables them to swell famously, and another in ten days or a fortnight is all that is needed before the fruit stones, unless the weather prove dry, when its application may be continued every ten days or a fortnight, always bearing in mind that the oftener it is given the weaker it must be. Three good waterings—viz., one when the fruit is fairly set and swelling, the second in the first dry weather afterwards, and the third just when the fruit takes its second swelling, will be found ample in the majority of seasons for trees in the open garden. These waterings are for Peaches, Nectarines, Apricots, Plums, and Cherries.

With regard to Pears, it does not matter how much liquid you give them in dry soils, but on naturally strong soils they are not much benefitted by more than a soaking the first dry weather after the fruit is set, and again when it is about half swelled. Apples, like Pears, should have moisture in dry soils, but need less on retentive loams. Strawberries flourish with a thorough soaking just when going out of bloom, and twice a week until the fruit is gathered. A moderately rich, deep, and firm soil, and plenty of nourishment when flowering and fruiting, seems to me all that is necessary to have plenty of Strawberries. Raspberries will swell and set their fruit finer than usual if deluged with sewage just when they are going out of bloom, and once a week during the period of fruiting. Manure Raspberries, and they will give plenty of fruit and very strong canes for another year; but never dig the soil deeply round them, nor give much manure, except when they are fruiting. Gooseberries and Currants may have a dose when the buds first begin to swell, another when the fruit begins to swell after setting, a third when rather more than half-grown, and another when the fruit begins to colour. The leaves will be all the greener, and the fruit will not turn yellow and drop after setting, but will swell well.

In applying sewage to fruit trees, the ground at some distance from the stem should be watered, as well as that near the stem, and the same remarks apply to vegetable crops. It should be poured along the rows of Peas on both sides, and is one of the best means for obtaining plenty of tender Peas during hot weather. It may be poured between the rows of all the Cabbage tribe—Cauliflowers especially; it prevents them running to seed, and assists in rendering the head large, close, and firm. A thorough soaking once a week during dry weather, or twice if very dry, will prove beneficial. Celery can hardly have too much, twice a week will prevent woodiness. Kidney Beans, which succeed better than most vegetables in dry weather, continue much longer in bearing if supplied with liquid manure, and Potatoes, which are generally small in dry seasons, attain a larger size; but in this case it need not be given until the haulm is fully grown, for they usually make enough of this. Of course, if dry weather set in prior to the haulm attaining

its full size or flowering, then sewage may be given advantageously. One or two drenchings between the rows during dry weather will mostly be enough for Potatoes. Asparagus, which it is always desirable to have large and fine, may be watered twice a week during dry weather, from April to August. In short, there is not a crop which is not benefited by the application of sewage in large but not strong doses. The necessity is greater for its use during dry weather; but in showery periods sewage enriches the soil, and the crop shows the good effects. I imagine, that after the application of sewage the ground remains longer moist than after an equal watering with water, and crops appear to do better when the sewage is given a few days before rain. It is hardly possible to apply it at a wrong time where bulk is wanted, but it should not be given when crops are not growing, or to those that are already too luxuriant. During wet weather it may be poured in an undiluted state on ground before cropping, and it then answers the same purpose as manure. Any smell is soon gone. After applying manure water great benefit is derived from hoeing or stirring the surface so as to admit air into the soil.

In addition to using manure to the crops already enumerated, I have applied it to Roses, Dahlias, Asters, Calceolarias, Hollyhocks, and many other plants from the time of their commencing to grow to that of their going out of bloom; once a week in damp periods, and twice a week during very dry weather. Some plants and trees do not appear to be benefited by liquid manure. This is more or less the case with the Pine and Fir tribe, though they grow better on manured than unmanured ground. Heaths will not bear it, and all bog plants seem to be improved neither in foliage nor flower, even by weak applications. These plants appear to require vegetable and not animal manures. Hollies care nothing for manure water, Laurels are improved by it, but Yews do not make one twig more though they grow the better of manure. Ferns, whilst they luxuriate in decaying vegetable matter, are not improved by solutions of solid manures, and perish under powerful doses.—G. ABBEY.

THE DUC DE MALAKOFF STRAWBERRY.

I PLANTED last August some runners (fine plants) of the Duc de Malakoff Strawberry; these are, at present, very healthy, but show no sign of producing flowers. Will you inform me whether it is usual for this variety of Strawberry not to produce fruit the first season after it is planted, and if not, what means should be taken to induce fruit-bearing?—R. T. C.

[The Duc de Malakoff is a fine juicy and vinous berry in the line of Ajax and Ambrosia, but better than either. I had them all three side-by-side some years ago, and did not find any of them crop satisfactorily on the whole. Some plants of the Duc de Malakoff cropped well, but four plants out of six had nothing, after having had a previous summer to gain strength, being deprived of flowers and runners, so I discharged it. I cannot, therefore, say what it would have done in the future. I believe that this severe spring the flowers of many Strawberries were cut off, or, being set, were stopped by the frosts. No doubt many of mine will not come to maturity from the above reason. Mr. Turner in his letter of this morning (June 10th) says—"Strawberries generally are but badly bloomed." Here, on the whole, I shall have good crops, deducting even many failing berries. I have excellent crops of the following:—Sir J. Paxton, ripe on Whit-Sunday, large, handsome, and good, a valuable early sort; Rivers' Eliza, which I am now picking; Wonderful; John Powell, very delicious; Scarlet Pine, very delicious; Eclipse, very good; Royal Hautbois, the best Hautbois; Eugénie, a large and useful sort; and Frogmore Pine, a most noble sort. I have eaten ripe berries of all these, except the last, to-day (June 10th), and have sent a mixed basket of Sir J. Paxton and Eliza to-day to my kind friend Mr. Sturt of Critchill. Still, though with unwearying watering, I shall have fine and superabundant crops, I can fancy that some berries that are "set" will come to "nil." I have added 800 yards of netting to my previous stock to keep off birds, which, if this dry weather last, will soon make a raid on our gardens. I would advise your readers to keep runners off their Strawberry plants and

water copiously, otherwise their crop and season will be short. After the berries are set in dry lands, till they redden, too much water in hot weather cannot be poured on them. After every picking this must be repeated. My servant says that he thinks the crops here are better than last year, and that Eliza is again the best cropper. I have had it for many years, and it has never failed me.

I cannot conclude without saying how grieved I am to read of the death of Sir Joseph Paxton—so valuable to the horticultural and floricultural world, and to whom this nation is so greatly indebted. His talent, his integrity of purpose, and his good common sense, will be missed and wanted! I am sure that I express a universal feeling.—W. F. RADCLIFFE, *Tarrant Rushdon.*

STRAWBERRY CROP.

THE failure of Strawberries in these parts (West Middlesex), is beyond all precedent. Fine stools did not produce a single truss. Others had a few trusses, the early blossoms of which were killed by frost. Many of the secondary buds have suffered in a way I cannot account for. The calyx is killed and turns brown before the flower expands, while the embryo fruit is quite fresh, but of course will never expand any farther, much less come to maturity. The chief mischief must have been caused last year, for my beds were never so well done, and were all dug and mulched last Michaelmas. My son tells me that tons have been sent in from the West of England; so I suppose they are better off there.

Pears have suffered immensely from the maggots of that fly, which you may remember I figured—from five to twenty-five maggots in a Pear, and Beurré de Capiaumont, which would have borne six bushels, will not have six Pears! This pest bids fair to rival the Vine mildew in its destructive character, and we seem still more powerless in preventing its ravages.—F. J. G.

VISITS TO GARDENS PUBLIC AND PRIVATE.

THE PALACE GARDENS, LONDONDERRY.

As the readers of THE JOURNAL OF HORTICULTURE are probably by this time aware, the gardens that I have the opportunity of visiting are of a very varied character; but I have invariably found that a good deal of the character depends on the gardener under whose care they are placed. The days are past, I think, for the class of gardeners who knew their work and were above it, and those who did not know their work and made believe that they did; and I believe employers generally have a better idea of the intelligence, skill, and constant forethought required in those who are employed in that capacity, and treat them accordingly; while gardeners do not now, as at one time was not uncommon, pursue their own way without in the least caring what his lordship, or one who is oftener a far more important personage, his *chef de cuisine*, thought about it. And this is only as it should be. It is very easy on gala days to admire the wonderful bunches of Grapes and the delicious Pine that grace the dessert; but surely something ought to be thought then, not only of the wealth that has provided the means whereby opportunity for growing such was afforded, but also of the skill of those whose watchfulness and intelligence have had so much to do with it; while, on the other hand, if a gardener finds that Sir Jasper or Lord Broadacres has his peculiar fancies, and wishes to have things done in a particular way, it is equally clear, I think, that those wishes should be attended to: no dignity is lost, and a great deal of comfort is gained by so doing. I have known places where a gardener, persisting in carrying out his own plans, has so thoroughly disgusted his employer, that he gradually lost all interest in his garden; while, when the garden changed hands, and one undertook it who properly considered what was due to his employer, an interest greater than he had ever had before was aroused. Old houses were taken down and new ones built, and the garden became a daily source of pleasure. How many employers have I known who hardly knew one flower from another, who have been so inoculated by the zeal and energy of their

gardeners, that they have become zealous amateurs, and have even budded into exhibitors.

I have been led into this train of thought by a visit lately paid to the Palace Gardens at the Bishop of Derry's—by no means what would be called show gardens, and what, in fact, by many of our southern friends would be considered very indifferent. But without that they have a good deal of interest, for there has been a battling with all sorts of adversaries. When the present excellent prelate came to the see, the cathedral and the garden were much on a par. In the former, the hideous deformities of what some one has called the dark ages—the last century—had destroyed any architectural beauty, though it never could destroy the historic interest of those old walls, to which in former days the citizens of Derry crowded to hear George Walker exhort them to steadfastness in the cause of liberty and truth; while in the latter there was, in fact, nothing but a wilderness. It had been let out for the sake of the fruit trees; grass had grown over the whole of the five acres which it contains, and there was not even a path in it. To restore the cathedral was the good bishop's first care, and it had been opened again just three years on the very day that I visited it. The garden was an after-consideration; but it was not until the present intelligent and earnest gardener took possession of it that real progress was made; and not only were there difficulties of this nature, but the soil is not naturally a good one. It rests on shale, I believe, and is consequently somewhat hungry, while in that northern climate I was assured by the gardener that the most sunny and summery weather was in the months of April and May, and yet nowhere have I seen a better promise both of flowers and fruit. The old wall trees have been replaced by new and excellent varieties of Pears, for to ripen Peaches out of doors so far north is out of the question, and the attempt has been consequently abandoned. Peas were well in bloom, but they had been grown in turves in-doors and then planted out. Experiments were being made on some of the early kinds which have been so much vaunted this season, and about which I fear we shall find that there has been a good deal of *hum*. One sort I tried last year which was to be ever so much earlier than Daniel O'Rourke, whereas it was really eight or nine days later. I learned here what may be an old, old story to many, but which to me was new—that the best method to prevent the birds from eating seeds is to soak these before sowing in a solution of red lead, about a teaspoonful to an ounce of seed; the lead to be mixed with a small quantity of water in a basin, and then the seed thrown in and well shaken about in it. I was assured by Mr. Goodman that this answered completely, that he had tried various ways, but that no plan was so effectual as this. To those who live in the neighbourhood of towns especially, into whose gardens all the sparrows of the locality come to picnic, this may be worth knowing. I saw the beds so treated: evidently the vitality of the seed had not been destroyed, for nearly every seed must have grown, while beds not treated thus and netted had been ravaged by the rascals, who, although they may do some service, do also a good deal of injury.

The amount of glass was small, but it was well managed. I have never seen Vines in pots better grown, and those planted in the house were also evidently thriving. Muscat of Alexandria was preferred to any of the same class; and Chavoush, Royal Vineyard, and other new sorts were being introduced. Strawberries (Black Prince and others), were and had been for some time fruiting; and abundance of rich and luscious fruit bore testimony to the excellent manner in which they had been treated. In the centre of the garden is a long walk extending from end to end, with fine Privet hedges at each side. This was to be planted as a ribbon-border, the background being formed by Hollyhocks; and Lobelia, Perilla nankinensis, scarlet Geraniums, and variegated Mint were used to complete the ribbon. I have no doubt that when in flower this will have a very fine effect. In the various squares vegetables of all kinds were doing well, although the presence of some old but good varieties of Apple trees hindered that completeness which all good gardeners, Mr. Goodman amongst them, desire. One or two I noticed were laid down in grass, and I found on inquiry that this was done in order to give the land a rest. It had been so abused for many years, that this

seemed the only practicable plan. It would be afterwards dug in, and, it was hoped, a new character be given to the land. Thus things were not done in a careless style, but intelligence and energy were brought to bear; and where this is the case difficulties, even those of climate, are successfully combated. In noticing these gardens I have had in my mind many somewhat similarly situated, where employers and gardeners are discouraged by the difficulties that lie in their way, and are apt to envy their more favoured brethren in other localities; but let them take heart of grace.

I should not omit to say that a good deal of stimulus has been given to gardening in the neighbourhood of Derry by the establishment of a horticultural society, very similar in its rules and working to that which we have had in our neighbourhood, and which has been a very great encouragement to all kinds of gardening amongst us. I am sure that it is a great boon to any place, where such things are attempted and done; and however discouraging the attempt may at first sight appear, the difficulties will be eventually overcome.—D., Deal.

ROYAL HORTICULTURAL SOCIETY.

FLORAL COMMITTEE, JUNE 10TH.—A Sub-committee was held in connection with the show of the same day. Seedlings and florists' flowers were few in number, and of no particular merit. The new plants were very numerous and interesting, and upwards of sixty certificates were awarded, nearly all the plants having previously received awards from the Committee. It seems a strange custom for the new plants to receive certificates again at the great shows; it appears more reasonable that plants of the current year which have been awarded certificates should on these occasions have the certificates attached to them, and should then be exhibited in collections, and the greatest number of first-class certificates in the collections should entitle the exhibitor to the gold Banksian medal, and the second most valuable collection should have the second gold Banksian medal.

On this occasion Messrs. Veitch and Mr. Bull carried off the greatest number of certificates. Mr. E. P. Francis exhibited a seedling *Zonale Pelargonium*, Hertford Gem. Mr. Bull sent again *Verbena Popular*, a variegated form; *Chrysanthemum Sensation*, a beautiful variegated Pomponé, useful for edging, and which received a first-class certificate; six seedling *Petunias*, of which one named *Blooming*, a dark-veined variety, was the best; *Mimulus duplex* seedlings; *Fuchsias Evangeline* and *Hector*; a beautiful collection of *Zonale Pelargoniums* in small pots; also a large collection of spotted *Pelargoniums*. From Messrs. Veitch came *Good-yera Veitchii*, a hybrid with beautiful foliage, to which was awarded a first-class certificate on the 16th of May, and the same at this meeting; and from Mr. Wilson *Zonale Pelargonium Fulham Rival*, also variegated *Zonale Pelargonium Lady Howard*. Messrs. Henderson, Wellington Road, sent two of the new double scarlet *Pelargoniums*, with weak and ragged trusses; unless these double varieties improve very much they will not be favourites with the public; also *Pelargonium peltatum elegans*, which is quite an acquisition among the old-fashioned Ivy-leaved *Pelargoniums*—bright green foliage, flowering freely, with pale lilac or rosy compact trusses, decidedly a very distinct and very good thing. It received a first-class certificate. It is somewhat remarkable that this useful section of *Pelargoniums* is not taken up for improvement, though so very well adapted for basket and all decorative work. Messrs. E. G. Henderson also exhibited *Petunia variegata*, Joseph Haudrechy, plants too small to afford any opinion of their merit; and *Centaurea ragusina compacta*, very like *C. argentea*, but more compact and feathery in foliage. It received a first-class certificate. Mr. J. Fraser exhibited six seedling *Pelargoniums*, but none of them sufficiently distinct or improvements on others in cultivation. Mr. Thompson, Ipswich, sent a *Primula Parryi*, with deep purplish rose flowers, in foliage very unlike its relatives—first-class certificate; *Pentstemon grandiflorum*, from North America. This is a noble plant of robust habit, bearing large, pale lilac flowers which are too much closed, but it

will, doubtless, be the source of quite a new feature among *Pentstemons*, which have been so much improved of late. A first-class certificate was awarded it.

MR. BATEMAN'S LECTURE ON DENDROBIA, JUNE 12. Mr. Henry Cole in the chair.—Mr. Bateman, in commencing his lecture, briefly adverted to *Coryanthes Sumneriana*, *Cypripedium caudatum*, and *Aërides crispum*, which were, along with some other Orchids, in the room. The subject of his lecture, however, said Mr. Bateman, was the great Indian genus *Dendrobium*. Rumphius had made a division of Orchids which was not so cumbersome as that adopted by modern botanists, and was probably better adapted for those who had little or no knowledge of the subject. Rumphius divided Orchids into two classes—the noble one, or those which grow on trees, and the rustic one, or those which grow on the ground. Thus, with Orchids, there was high life and low life, but no middle class—they were all either patricians or plebeians. To the former belonged the *Dendrobia*, and to the latter the Orchids which we had plucked in early years by the hedge-sides. Whether it were true or not that the cradle of the progenitors of our race was in Armenia, between the head-waters of the Euphrates and Tigris, he would not pretend to say, but certain he was, that Milton was right in placing no Orchids on the trees in the Garden of Eden. It was not until the fifteenth or sixteenth century that man took any intelligent notice of tree Orchids; and the discoverers of America were so bent on the pursuit of mammon that they passed the Orchids on the trees without noticing them. Old Hernandez, a Spanish botanist, was the first to give anything like a figure of a tree Orchid. That was early in the seventeenth century. In the frontispiece to his work, from which he had borrowed the large sketch hung up in the room, were three Orchids, one of which, there could be no doubt, was *Stanhopea tigrina*, and another was *Lælia grandiflora*, although Hernandez had dragged them down from the trees to the ground. They were described under barbarous names—the *Lælia*, for instance, as *Cortico-atzonte-coxotchi*, which should make us thankful for such names as we now have. Turning now from the new world to the old, more than a century afterwards Rumphius propounded a theory which, if not his own, he endorsed. Noticing the resemblances which certain Orchids bore to birds, beasts, and insects, his theory was that these plants had their origin in the droppings of the animals which the plants resembled. Absurd as this theory was, it was not, perhaps, more so than some of our own day. Reverting to Rumphius's division of ground and tree Orchids, Rumphius had named the latter all *Angræcum*, a name which, it was believed, was derived from the Malay word for tree; and, though the name still held its ground as applied to that popular and increasing genus, the *Angræcums*, these were entirely confined to Africa, and a name was still wanted for the tree Orchids of the east and of the west. Linnaeus called the latter *Epidendrum*, from *epi*, upon, and *dendron*, a tree, because they all grew on trees; and he thought that, when the world was fully explored, there might be a hundred species of tree Orchids, little dreaming that there would be not merely a hundred species, but at least as many genera, some with between 200 and 300 species. Swartz, another Swedish botanist, called one of these *Dendrobium*, from *dendron*, a tree, and *bios*, life, they living on trees like the *Epidendra* of the western hemisphere. Sir Rowland Hill had put us all in districts, and, if he (Mr. Bateman) might be allowed to imitate Sir Rowland, he would do the same with Orchids. Referring to a map of the world hung up in the room, *Angræcum*, being peculiar to Africa, might be taken as representing S., or the southern district; *Dendrobium*, E.C.; *Epidendrum*, W.C.; and the ground Orchids of more temperate regions would supply the other letters. He had long been doubtful whether *Epidendrum* or *Dendrobium* would head the poll. Twenty-five years ago, when he began to cultivate Orchids, the former had the lead, but now he thought *Dendrobium* were the more numerous. Each genus numbered between two and three hundred; but numbers were not the best test, but beauty. Out of forty or fifty *Epidendra* which he had grown, he found only three worthy of being kept, and two of these were in the room—namely, *E. vitellinum* and *E. macrolechilum roseum*. On the other hand, out of the same num-

ber of *Dendrobia*, after "scratching" all that were not worth growing, more than three-fourths remained. He would now endeavour to give some notion of their growth. The most simple form of *Dendrobium* was one bulb, one leaf, and one spike of flowers, proceeding sideways from the top of the bulb, as in *D. aggregatum*. The next form was a longer bulb, and two leaves, as in the Australian *D. speciosum*; then we come to four or five leaves, as in *D. densiflorum*, but the racemes were still produced in the same way. Further progressing, the bulbs almost disappear, and stems make their appearance, clothed with leaves all the way up, as in *D. Wardianum*. *Epidendrum* are readily distinguishable from *Dendrobium* by the spike coming out at the top of the bulb, and forming a continuation of the latter, whilst in *Dendrobium* the spike is produced at the side. Those first imported were far from the most attractive, and the most beautiful were those which reached us last. Some of these were exceedingly local. Thus, in Ceylon, where much novelty is not likely to occur, not long ago was found the beautiful *D. MacCarthiae*, figured in the "Botanical Magazine" from dried specimens sent home by Mr. Thwaites; and Mr. Bateman urged clergymen and young officers abroad to look for such plants, and send them home. He next directed attention to *D. Falconeri* and *D. Falconeri obtusum*, both of which he had long suspected to be perfectly distinct, and he found that to be the case. The latter was figured in Mr. Warner's work as *D. Wardianum*, which is to be its name henceforth. He had endeavoured to have them both in flower at the time of his lecture; but in the one case half the flowers had dropped, whilst in the other they were not yet in their beauty. Among the merits of *D. Wardianum* was the great endurance of its flowers. Another beautiful species, *D. taurinum*, from the Philippines, was also referred to. No *Camellias*, Mr. Bateman said, and scarcely any *Roses*, would carry through a long London night, but these *Orchids* would run half a dozen nights; and he urged the ladies to try how long the bloom would last, as any experience in that way would be a guide to nurserymen, and that class now springing up who grow these flowers for the London market. Other *Dendrobes* belonged to a class which he had called bridal *Orchids*, because they presented the colours which, by a sort of tradition, were associated with weddings, though he did not suppose *Orange* flowers would be superseded. One of the most beautiful was *D. formosum*, yellow and white, which would last a month. A few gems had yet to be looked for. In the large island, he might almost say continent, of New Guinea a vast number of *Orchids* were known to exist, but scarcely any of them had as yet been introduced. Turning now to Borneo, he held up a dried specimen of a *Dendrobium*, called by the natives *Kina-balon*, with beautiful flowers; also a leaf, measuring some 15 inches long by 12 wide, sent home by Mr. Thomas Lobb, but unaccompanied by any flower. If, remarked Mr. Bateman, we did not know it came from Borneo, we might suppose it came from Broddignag, and he gave it the name of *Dendrobium gigas*. As regards culture, *Dendrobium* could not be classed among cool *Orchids*, or those which would succeed treated in that way all the year. During three or four months, while making their growth, they required a good, strong, moist heat; but this was only in summer, and for the rest of the year they might be kept in a cooler temperature. Thus, the plant of *Dendrobium Falconeri*, which he had brought to illustrate his lecture, had spent the last month in a cool vinery. For those who could cultivate but a single genus, none would repay them better than *Dendrobium*. Some might prefer *Cypripedium*, some *Oncidium*, and others a selection of different genera; but whatever form the *Orchid* mania might take, it would afford change and relaxation to the overwrought brain. *Orchids* were capable of producing this result; even *Fungi* had many lovers. He would relate an anecdote of Dr. Klotzsch, who in Germany reigned supreme over *Fungi*, or *Foongi*, as he (Dr. K.) called them. They were his speciality, though he was a good general botanist as well. Travelling in Scotland, many years ago, with Dr. Davidson, and having called at the post-office for their letters, Dr. Klotzsch received one from home that plunged him in the greatest grief. So profound was it that it was some time before Dr. Davidson ventured to ask him the cause. When at length he did so, Dr. Klotzsch informed him that the letter had brought him

the news that he had lost £300. Dr. Davidson was somewhat disappointed at the way in which the German professor took the news, and at length he felt it his duty to gently remonstrate. He did so, when Dr. Klotzsch faltered out—"It is not the £300 that I care about, but I had set it apart to investigate the *Fungi* of Hindostan; no one besides myself will go to see the *Fungi* of Hindostan, and that I shall never be able to do." But there is "no cloud" without "a silver lining," added Mr. Bateman, and at length Dr. Klotzsch exclaimed—"I thank God for that He hath put the love of *Foongi* in my heart, and when I see a *foongus* I am happy." What *Fungi* did for poor Dr. Klotzsch, other plants might do for us; and Mr. Bateman instanced Solomon as one who, amid all the distractions of a court and kingdom, knew every plant, from the Cedar on Lebanon to the *Hyssop* on the wall; and concluded his lecture with an eloquent peroration, which met with much applause.

Mr. G. F. Wilson moved a vote of thanks to Mr. Bateman, also to Dr. Lindley and Mr. Veitch for the specimens and plants lent by them; and Mr. Bateman, in returning thanks, called attention to some *Orchids* just imported by Mr. Veitch from the north coast of Australia, one of which is known to bear most beautiful rose-coloured flowers, and the other was *D. Hillii*, of which a representation is given in the "Botanical Magazine," producing a spike of white fragrant flowers resembling an officer's plume.

AZALEA SHOW, JUNE 17.—Of this it was stated in a notice posted up at the entrances, that "the unusual forwardness of the season has made it impossible to have a full show of *Azaleas*," and there were only such as occurred in a very pretty collection of stove and greenhouse plants and *Orchids*, from Messrs. Lee, of Hammersmith, who also contributed half a dozen boxes of beautiful cut *Roses*. A similar exhibition came from Mr. G. Clarke, Brixton Road; and Mr. Bull furnished a numerous collection of new plants, *Ferns*, *Dracænas*, &c., and a fine pan of *Trichomanes speciosum*.

ROYAL BOTANIC SOCIETY'S SHOW.

JUNE 14.

THE second great Show again afforded a magnificent display, and though the number of plants exhibited was probably scarcely so large as on the previous occasion, there were numerous and gorgeous stands of *Roses* and the additional attraction of fruit. The weather was highly favourable to an out-door exhibition, being very warm, and, notwithstanding the counter-attraction of Ascot, the lawn was crowded with several thousands of visitors, the fair sex largely predominating.

STOVE AND GREENHOUSE PLANTS.—Numerous collections were shown, some of which were very good, but the plants of which they were composed presented little difference from those noticed last month. *Allamandas*, consisting of *A. cathartica*, Schottii, and *grandiflora*, were in good bloom, especially the last-named from Mr. Peed and Mr. Page, and the first two from Mr. Whitbread, who also had a fine *Vinca rosea*, and *Gompholobium splendens* well set with its yellow blooms. *Ixora salicifolia* with fine heads of bloom was noticeable in Mr. Peed's collection, as also a fine *Erica obbata*. *Clerodendron Thomsoni* was again in fine bloom as shown by Mr. Kemp and Mr. A. Ingram, and *Rhynchospermum jasminoides* was well represented in several collections; so too was *Dracophyllum gracile*. Mr. Fraser again exhibited his grand plant of *Phanocoma prolifera*, in company with others shown at Kensington in the previous week; and from Mr. Donald came *Sollya linearis* with a profusion of its deep blue flowers. Of *Pimelea decussata*, a nice little bush was shown by Mr. Rhodes, also a very good *Dracophyllum* and *Pieroma elegans*; and in Mr. Chilman's collection we noticed *Aphelaxis macrantha rosea* in fine bloom; and the purple variety in a very good collection from Mr. C. Smith, also *Azalea coronata* in fine bloom. *Hæmanthus puniceus*, a very old but showy Cape bulb, was shown by Mr. Baxendine with four of its brilliant orange scarlet heads.

Prizes.—For sixteen: first, Mr. Whitbread, gardener to H. Collyer, Esq.; second, Mr. Peed, gardener to Mrs. Tredwell;

third, Mr. Kaile, gardener to Earl Lovelace. For ten (Nurserymen): first, Mr. Fraser; second, Mr. Rhodes; third, Mr. Baxendine. For ten (Amateurs): first, Mr. Chilman, gardener to Mrs. Smith, Epsom; second, Mr. A. Ingram, gardener to J. J. Blandy, Esq., Reading; third, Mr. Page, gardener to W. Leaf, Esq.; fourth, Mr. Wheeler, gardener to Sir F. Goldsmidt, Bart. For six: first, Mr. C. Smith, gardener to A. Anderson, Esq.; second, Mr. Donald, gardener to J. G. Barclay, Esq., Leyton; third, Mr. Wheeler, gardener to J. Phillpot, Esq.; fourth, Mr. Kemp, Albury Park.

FINE-FOLIAGED PLANTS AND FERNS.—A remarkably fine collection of the former came from Messrs. A. Henderson and Co., in which *Alocasia macrorrhiza variegata* was very fine, the large leaves being in some cases half white. *A. metallica* was also fine, as well as two large *Caladiums*, *Belleynei* and *Chantini*, the white-marked leaves of the former contrasting well with the red of the latter. The others were a large *Pandanus*, variegated *Crotons*, and *Maranta Porteana*, with the leaves barred with white, and red on the under side. A good collection was also shown by Mr. Young, consisting of Palms, variegated *Yuccas*, and *Maranta fasciata*. Of exotic Ferns fine collections were shown by Mr. Hill, gardener to R. Hanbury, Esq., and Messrs. A. Henderson & Co., comprising large plants of *Cibotium Schiedei*, *barometz*, and *princeps*; *Alsophilas*; the pretty *Gleichenia dicarpa*; *Drynaria morbillosa*, conspicuously veined with red; *Pteris crenata*, with long narrow leaves; and in other collections were the white variegated *Pteris argyrea*, *Adiantums*, *Platyneriums*, &c. Interesting collections of British Ferns came from Messrs. Ivery, and Mr. Holland, Isleworth.

Prizes.—For fine-foliaged Plants: first, Messrs. A. Henderson & Co.; second, Mr. Young. For twelve exotic Ferns: first, Mr. Hill; second, Mr. Young; third, Mr. Sutton, gardener to Lieut.-Colonel Jeakes. For twelve British: first, Messrs. Ivery; second, Mr. Holland.

ORCHIDS made a beautiful display, notwithstanding the introduction of some inferior specimens to make up the requisite number in the larger collections; and, as an eminent orchidist remarked, it would be much better to restrict the numbers of plants required from private growers, very few of whom can bring so many as twenty in first-rate condition. Mr. Bullen, as usual, exhibited a fine group of twenty, in which were the Moulmein *Dendrobium Parishii*, in fine bloom; *D. chrysotoxum*, just expanded, and not so fine as it soon will be; *Cœlogyne asperata*, with cream, orange, and cinnamon-coloured flowers; *Brassia Henchmanni*, pale green, black, and yellow; a large *Aërides odoratum*, an excellent *Cypripedium barbatum superbum*, *Oncidium ampliatum majus*, *Trichopilia crispa*, under the name of *T. gloriæfiora*, and *Uropedium Lindenii*, one of the American tailed Orchids, and a very good specimen. Mr. Baker sent the curious *Dendrobium filiforme*, with pendulous strings of yellowish green flowers; good *Aërides*, *Saccolabiums*, *Vandas*, *Lælias*, *Cattleyas*, and *Cypripedium superbiens*, wrongly named *grandiflorum*, with nine large blooms, and *C. Hookeriæ*. *Phalænopsis*, *Anguloa Clowesii*, *Cypripediums*, among which was a fine example of the new and beautiful *Stonei*, and *Orchis foliosa*, but not so fine as we saw it a year or two ago, were furnished by Mr. Page. *Odontoglossum hastatum*, under the name of *Oncidium Hookeriæ*, *O. sessile*, in excellent bloom, together with various *Cypripediums*, a *Vanda*, &c., came from Mr. Peed. Mr. Veitch sent *Anguloa Clowesii*, with no less than fifteen or sixteen of its fine yellow Tulip-like blooms; *Vanda suavis*, with three fine spikes; *Aërides Lobbii*, and *Cypripedium barbatum superbum*. In a collection of twelve, from Mr. Wilson, gardener to W. Marshall, Esq., were *Cattleya Acklandiæ*, with five fine blooms; *C. superba*, most brilliant in colour, magenta and deep crimson; *Cypripedium Hookeriæ*; and *Dendrobium infundibulum*, with seven of its beautiful white and orange flowers. In other collections we noticed various *Phalænopsis*, *Vandas*, *Cypripediums*, *Saccolabiums*, *Cattleya citrina* and *Mossii*, *Odontoglossum Phalænopsis* and *nævium majus*, and *Dendrobium moschatum*, a free-blooming species, easy of cultivation, and bearing considerable resemblance to *D. Dalhousianum*.

Prizes.—For twenty: first, Mr. Bullen, gardener to A. Turner, Esq., Leicester; second, Mr. Baker, gardener to

A. Basset, Esq.; third, Mr. Page; fourth, Mr. Peed. For twelve: first, Mr. Penny, gardener to H. Gibbs, Esq., Regent's Park; second, Mr. Wilson; third, Mr. A. Ingram. For six (Amateurs): first, Mr. Wiggins, gardener to W. Beck, Esq.; second, Mr. Chilman; third, Mr. Robson, gardener to G. Cooper, Esq.; fourth, Mr. Wheeler, gardener to J. Phillpot, Esq. For six (Nurserymen): first, Mr. Veitch; second, Mr. Williams; third, Messrs. Lee; fourth, Messrs. Jackson.

ROSES.—In consequence of the hot season those in pots were not so fine as at the earlier exhibitions. We noticed, however, a fine collection, in small pots, from Messrs. Paul and Son; and among the large plants of Mr. Turner and Messrs. Lane good examples of *Souvenir d'un Ami*, *Victor Verdier*, *Madame Damazin*, and *Paul Perras*. Mr. Turner had beautiful stands of cut blooms, among which *Cloth of Gold*, *Madame C. Crapelet*, *Alpide de Rotalier*, *Gloire de Santenay*, *Devoniensis*, and *Madame Bravy* were very fine. In the Amateurs' class it is rare to meet with such blooms as those which came from Mr. May. *Boule d'Or* was remarkably fine, and so, too, was *Triomphe de Rennes*. *Comtesse de Chabillant* was very large for that kind; and there were fine examples of John Hopper, *Madame Bravy*, *Charles Lefebvre*, and *Souvenir d'un Ami*.

Prizes.—For ten, in 13-inch pots: first, Mr. Turner; second, Messrs. Lane. For six: third, Mr. Terry; fourth, Mr. Young. Cut blooms, twenty-five varieties (Nurserymen): first, Mr. Turner; second, Messrs. Paul & Son; third, Mr. W. Paul and Mr. Mitchell. Twenty-five (Amateurs): first, Mr. May, gardener to C. M. Worthington, Esq., Caversham Priory; second, Mr. Ingle, gardener to G. Round, Esq.; third, Mr. Exall, gardener to J. Hollingworth, Esq., Maidstone. Extra, Miss Crawshaw; Mr. Wright, gardener to Mrs. Ramsden, Twickenham; Mr. Evans, gardener to C. Newdegate, Esq. Single blooms: first, Mr. Turner; second, Messrs. Paul & Son and Mr. Exall.

AZALEAS, generally, were far past their best. Among those from Mr. Veitch, *Violacea superba*, *Iveryana*, *Extrani*, and *Juliana* were in very good bloom.

Prizes.—First, Mr. Veitch; second, Mr. Fraser. Amateurs: first, Mr. Wheeler, gardener to J. Phillpot, Esq.; second, Mr. Peed; third, Mr. Kaile.

HEATHS.—Many excellent plants were shown in the collections of Mr. Rhodes, Mr. Peed, and others. *Ventricosa magnifica* was very showy; so, too, was the crimson *Westphalia*, and the scarlet and green *Massoni*. Among whites were *Eassoniana*, *Vernonii*, *Jasminiflora alba*, and *Shannoni*; and of the tricolor class, *tricolor Wilsoni*, *t. rosea*, and *t. flammea*.

Prizes.—For ten: first, Mr. Rhodes; second, Messrs. Jackson; third, Mr. Baxendine. For eight: first, Mr. Peed; second, Mr. A. Ingram; third, Mr. Page; fourth, Mr. Kaile. For six: first, Mr. Chilman; second, Mr. C. Smith; third, Mr. J. Wheeler; fourth, Mr. G. Wheeler.

PELAGONIUMS.—Conspicuous among these was a fine collection from Mr. Bailey, gardener to T. T. Drake, Esq., Shardeloes. Among them *Sanspareil* was a splendid mass of bloom; and *Spotted Gem*, *Lord Clyde*, *Guillaume Severyns*, *Glowworm*, and *Lady Canning* were also very good. Mr. Turner also had a fine collection, in which were *Fairest of the Fair*, *Desdemona*, *Lord Clyde*, *Ariel*, *Glowworm*, and *Viola*. *Couleur de Rose*, in Mr. Fraser's twelve, was conspicuous for its brilliant colour. In Fancies Mr. Bailey had a large silver-gilt medal awarded him for excellence of cultivation. His plants, it is hardly necessary to observe, were very fine. They consisted of *Arabella Goddard*, *Roi des Fantaisies*, *Clemathe*, *Madame Rougière*, *Delicatum*, and *Princess Royal*. Mr. Turner also exhibited a fine collection containing several of the above sorts.

Prizes.—For twelve (Nurserymen): first, Mr. Turner; second, Mr. Fraser; third, Messrs. Dobson & Son. For ten: first, Mr. Bailey; second, Mr. Wiggins. For six Fancies (Nurserymen): first, Mr. Turner; second, Mr. Fraser. For six (Amateurs): extra first, Mr. Bailey; second, Mr. Donald.

NEW PLANTS AND MISCELLANEOUS.—There was again a long array of new plants, but most of them have been already noticed in our columns. Mr. Veitch had the beautiful *Bertolonia guttata*, Mr. Dominy's new hybrids between *Ampechilus* and *Goodyera*, *Urecolina aurea*, with large, pen-

dulous, yellow flowers, a fine-foliated *Philodendron*, *Marantas*, and *Gymnogramma flexuosa*; Mr. Williams, the beautiful *Phœnicophorium sechellarum*, *Phalœnopsis Lûdemanianna*, *Smilax macrophylla maculosa*, with silver-variegated leaves, a pretty *Gleichenia*, *Anectochilus Turneri*, with beautiful rose veinings on a dark ground, and *Colocasia longiloba*, with pale green leaves. Messrs. Ivery exhibited some new hardy Ferns, among which were *Polystichum angulare decurrens*, and *P. a. rotundatum*; and Mr. Bull, new *Aucubas* and *Rhodeas*, *Smilax macrophylla maculosa*, *Pandanus latissimus*, with rather broad pale green leaves, and many others seen at Kensington on the previous Saturday. *Richardia hastata*, *Centaurea rugosina compacta*, and the variegated *Cheiranthus Marshalli*, came from Messrs. E. G. Henderson. Seedling *Pelargoniums* were rather numerous, the best were Charmer and Sparkler, from Mr. Bull; Nero, clouded scarlet, with a white eye and dark top, edged with crimson, *Atalanta*, magenta crimson lower petals, with a small blotch in the top, and *Alabama* and *Gladiateur*, all four from Mr. Nye. Of *Zonale Pelargoniums* Mr. Windsor had Exhibitor, a broad-petaled salmon scarlet, *Pink of Perfection*, *Gladiateur*, pale salmon, *Great Eastern*, and Sir Robert Peel, bright scarlet; and Mr. Holland, *Rosalie*, a promising kind with large trusses. Beaton's *Nosegays* were again shown very successfully by Mr. W. Paul, with the addition of *Pillar of Beauty*, with large trusses of orange scarlet blooms; *Wiltshire Lass* by Messrs. Downie & Co.; *Petunia Illuminator*, a very pretty striped variety, by Mr. Clarke, *Streatham*; and *Double Tom Thumb Nasturtium*, by Messrs. Carter. Miscellaneous objects consisted of *Pinks* from Messrs. Turner, Hooper, Kingston, and Waymouth; *Pansies* from Messrs. Downie, Hooper, and others; cut flowers of herbaceous plants from Messrs. Paul & Son; hanging-baskets from Messrs. A. Henderson and Mr. Young; *Fuchsias* from Mr. Gardiner and Mr. Wheeler, gardener to Sir F. Goldsmidt; and last, but not least, a beautiful collection of *Lilium auratum* from Mr. Turner. Some of the flowers had much more red in the bands than we have ever before seen, others were remarkable for their breadth of petal, and all for the size and beauty of the flowers.

FRUIT.

The show of fruit was tolerably extensive, especially considering the period of the season, and generally good.

PNES.—Of these but few were shown. There were two *Providences* of about 8 lbs. *Queens* though good did not appear to be heavy, the weights, however, were not stated.

Prizes.—For *Providence*: first, Mr. Ruffett, gardener to Lord Palmerston; second, Mr. Bailey; third, Mr. Masters. For *Queens*: first, Mr. Barnes; second, Mr. Godfrey; third, Mr. Standish and Mr. Stevens, Malvern Hall. For any sort: first, Mr. Bailey; second, Mr. Standish.

GRAPES.—Seldom have finer bunches of *Black Hamburgh* been seen than those from Mr. Fowler of Castle Kennedy. They were very even in size and berry, their weights being 3 lbs., 3 lbs. 1 oz., and 3 lbs. 2 ozs., giving for the three bunches 9 lbs. 3 ozs. Mr. Henderson took an equal first prize for excellent well-coloured bunches; and Mr. Meredith with one very large bunch and two of less size, though still splendid bunches, was second. Many fine bunches were likewise shown by other exhibitors. In *Black Prince* Mr. Hill, Keele Hall, and Mr. Meads, Minley Manor, this year, as last, out-distanced all competitors, and were placed equal first. Mr. Meads' bunches weighed 8 lbs. 14 ozs. Other *Black Grapes* consisted of *Trentham Black*, shown in fine condition by Mr. Meads; and good *Black Frontignans* from Mr. Allport. *Muscats* were all unripe, and no class being provided for them the Judges had a most difficult task in deciding on their merits as compared with other *White Grapes*, none of which will bear comparison with a ripe *Muscat*. They are either worthy of a class to themselves at this season, or they are not, and in the latter case it would be better to exclude them altogether, and award a higher prize at the July show. Many fine bunches were, nevertheless, shown with but the one defect of unripeness. Of other kinds there were good bunches of *Buckland Sweetwater*, and *Golden Hamburgh*, from Mr. Pottle and Mr. Fowler.

Prizes.—For *Black Hamburgs*: first, Mr. Fowler and Mr. N. Henderson; second, Mr. Meredith; third, Mr. Thompson and Mr. Clements, extra, Mr. Allen, Tottenham.

Hall, and Mr. Wallis, Astle Park. For *Black Prince*: first, Mr. Meads and Mr. Hill; second, Mr. M. Henderson. For any kind: first, Mr. Meads; second, Mr. Pottle and Mr. Harwood; third, Messrs. Lane.

PEACHES AND NECTARINES were tolerably numerous, and some were very good. The principal *Peaches* were *Violette Hâtive*, *Royal George*, and *Noblesse*. Mr. Joyce took the first prize with large fruit of a kind to which no name was attached, supposed to be *Vanguard*, but doubtful. Mr. Allen was second, Mr. Sage third. For *Nectarines* Mr. Lynn, Hedsor, was first with *Violette Hâtive*, very fine; Mr. Holder second with *Elruge*; Mr. Turner, and Mr. Hill, Keele Hall, third. Remarkably fine boxes of *Peaches* and *Nectarines* came from Mr. W. Allen, the fruit being very even in size, and finely ripened.

Of other fruits *Melons* were numerous shown. The best *Scarlet-fleshed* were *Malvern Hall*, from Mr. Paton, gardener to H. Lucy, Esq., *Charlecote Park*, and *Gem*, from Mr. Kaile. In *green-fleshed* Mr. Enstone was first with a hybrid; Mr. Pottle second with *Pottle's Green-fleshed*, a large yellow kind, mostly oval in shape. *Cherries* chiefly consisted of *May Duke*, *Black Tartarian*, and *Elton*. *Belle d'Orleans* and *Knight's Early Black* were also shown. Mr. Turner and Mr. Ruffett were first and second in the *Black* class, and Mr. Enstone and Mr. Dawson held similar positions in *White Cherries*. *Strawberries* were inferior to what we have seen in former years. Sir Joseph Paxton, Sir Harry, and President were among the best. Mr. Turner was first, Mr. Widdowson second, Mr. Pottle third. In *Figs* the best were the *Castle Kennedy*, from Mr. Fowler, and *White Marseilles*, which, though not equal to others in appearance, was excellent in flavour. Mr. Standish again exhibited his fine pot *Cherries*.

TODMORDEN BOTANICAL SOCIETY.

MONDAY, JUNE 5.

We noticed on the table several very interesting and rare British plants, both in the phænogamous and cryptogamous sections. Among the former we may name *Eriophorum alpinum*, and some fifteen or twenty specimens of *Saxifraga*. These last had an especial interest, as serving to show that the spotted-flower species, with a few exceptions, are confined to the entire-leaved section, those having more divided leaves being almost invariably wanting in that characteristic.

A series of some of the rarer British *Willows* was also noticeable, including *Salix reticulata*, *S. herbacea*, *S. repens*, and *S. pentandra*. With reference to this last species the Hon. Secretary remarked that it was a matter of some importance to know that the male plant was very distinct from the female as regards habit, &c., the latter being merely a straggling sub-tree, while the former grew to a much larger size.

Among cryptogams, fronds were exhibited of a magnificently ramulose *Lady Fern*, lately discovered by Mr. James Law, of the Vale Nurseries, having at least a hundred fronds upon it, every one of which is branched; certainly one of the best "finds" we have recorded in this neighbourhood for some time back.

HARDY ROSES.

THESE *Roses* wintered out of doors well, and are beautiful for growth, foliage, buds, and blooms, and may be advantageously bought or propagated to any amount.

1, *Madame Victor Verdier*, A1; 2, *Pierre Notting*, A1; 3, *La Duchesse de Morny*, A1; 4, *Eugene Verdier*, very fine; 5, *Baronne P. de Kinkelin*, very fine.

They are rightly described in the catalogues. In due time I shall speak of these and others more fully.—W. F. RADCLIFFE, Tarrant Rushton.

BRIGHTON AND SUSSEX HORTICULTURAL SOCIETY.—The summer Show, which scarcely yields in interest and extent to the greatest of our metropolitan exhibitions, is to be held on the 28th and 29th inst., in the rooms and grounds of the Pavilion, a building admirably adapted for the purpose. The schedule is very liberal; and there are no less than

sixty-five classes, thirty-six of which are open to all England, the others to those residing in Sussex only. Intending exhibitors should send notice to the Secretary, Mr. E. Carpenter, 96, St. James's Street, Brighton, of the classes in which they purpose showing, before Saturday, the 24th inst.

STOPPING VINE SHOOTS—SYRINGING.

I CONSIDER that no general rule can be laid down for stopping Vines on the spur system when showing fruit. It is, therefore, necessary for me to say why I think so. If a shoot is strong it will require stopping nearer home than a weak one does, and the strong-growing kinds throughout will require somewhat different treatment from the more delicate kinds. For instance: some of the Sweetwaters require different treatment from the Muscat of Alexandria, and pot Vines in all cases require a management different from that for those planted out. No doubt Mr. Wills is quite right in saying that the leaves are the mouths to feed the Grapes; but let us bear in mind that if a master of a family had more mouths than he had food to put in them the whole family would suffer, and let us try to apply this to the case before us.

Let us first look at the pot cultivation (and, by-the-by, Mr. Wills does not tell us, but I infer he alludes to Vines planted out), and pot cultivation is now extensively practised, and well deserves attention. A successful grower will find it necessary to adopt Mr. Wills's views in stopping with two leaves; indeed, in some instances I would not stop at all until the fruit were set, and the bunch fully formed and thinned; but when luxuriant growth is going on with planted-out Vines I have experienced that stopping at the very eye where the bunch is will be productive of the best fruit, and I think reason will bear us out on this point. Cut short in the way described, the sap or food, of course, flows immediately to the apex of the shoot or bud. For a week or so there is nothing to feed but one leaf and the bunch, and in a very little time the apex bud will burst, and we can then give one or two leaves as circumstances require—not that I follow this strictly, but I do in some instances, and in all cases one eye only above the bunch.

Mr. Wills and myself differ in *todo* as to syringing after the Grapes are set, and whilst I am in opposition to your correspondent, I know I am at drawn swords also with the great Vine-grower Mr. Thomson, of Dalkeith. Of course no one would think of syringing whilst they were in flower, but after they are nicely set, about thinning time, most decidedly I say syringe (in hot weather after the sun has left the house), not only the floor and walls, but the Vines, leaves, fruit, glass, and every part of the house. I will offer a proof that I am right, too, to those who choose to avail themselves of the opportunity to see the houses here. Two years ago, when I came to this place, the houses were all new, the Vine-border well made under the eye of an experienced Vine-grower, and young Vines had been planted out about six weeks, but were very badly attended to, consequently had not made a move after being planted; even the young leaves were turning yellow. A particular acquaintance of mine and one of the best Vine-growers in the kingdom, Mr. Burton, at the Marquis of Salisbury's, saw them in that stage; his opinion was that they were completely ruined. I had my own thoughts upon the matter; I could see they had been kept quite dry. I set to work, had the inside border well saturated with water, kept the house a little shaded from the burning sun (the month of June), I cut the Vines in to one of the most prominent eyes I could find, and wrapped the Vines in damp moss, and the house was syringed night and morning. The result was in about a fortnight the top bud began to show vitality, in three weeks burst, and by the end of summer the canes had reached the top of the house. Mr. Burton saw them again in the autumn, but could scarcely credit they were the same Vines. The following season—namely, last year—I allowed them to bear a bunch or two, and here again I am at variance with Mr. Thomson. This year I am fruiting them from the bottom to the top of the house. They are now in vigorous health, those in one of the houses just changing colour, and have been treated up to this time as before described, having had the syringe at work without intermission. The foliage is

green and healthy, the berries well swollen and free from rust and spot of any description.

I consider attempting to aid fertilisation useless. I had a house (pot Vines) in bloom in the beginning of January last, the worst time of the year; I never used any artificial means to assist the fructifying pollen. The flowers are hermaphrodite, and the anthers are so connected with the stigma of the pistil that there is no need of any assistance. The bunches I am speaking of here all set, and have long since been cut, and now a second batch of pot Vines is fruiting in the same house.—ALFRED WHITTLE, *Gardener, Bush Hall, Hatfield, Herts.*

THE NEW EARLY PEAS.

IN the spring of this year it was proposed by Messrs. Carter that the early Peas should be carefully tried and proved under our superintendence, at Waterloo Nursery, Kilburn, a fine open spot of ground, with a subsoil of stiff clay. We communicated our intention to Messrs. Sutton, of Reading, and Messrs. Dickson, of Chester, and they both kindly forwarded true stocks of their early Peas, and Messrs. Fairhead hearing of the experiment, also wished their varieties to be tested. We procured Carpenter's Express, and Dillistone's Early Prolific, from the raisers. The Peas were all sown on the 15th of March, one long row of each, side by side, of the following named sorts:—Sutton's Ringleader, Fairhead's Conqueror, Dillistone's Early Prolific, Carter's First Early, Fairhead's Railway, Sangster's No. 1, Carpenter's Express, Fairhead's Hardy's Early, and Dickson's First and Best Early. The following five varieties—Dillistone's Early Prolific, Sutton's Ringleader, Carter's First Crop, Fairhead's Conqueror, and Fairhead's Railway, all proved to be identical; in fact, so much so, that they all appeared the same, both in height (2 feet), time of flowering (13th of May), colour of the foliage, style of growth, measurement of the pods, their shape, number of peas contained in the pods, the peculiar property of all these five sorts, in producing a mass of pods from the bottom to the top of the haulm, and in the whole crop being fit for use simultaneously. The entire row if need be can be gathered and used the same day; again, the flavour in all is alike. We must, therefore, so far as our trial and judgment are concerned, remark that, throughout all the stages of their growth, there cannot be found a shade of difference; we, therefore, consider that honour should be given to whom it is due, and that Mr. Dillistone has the merit of sending out the earliest Pea known.

We now come to Sangster's No. 1, Dickson's First and Best Early, Carpenter's Express, and Fairhead's Hardy's Early, these we treated exactly alike, one long row of each variety planted side by side. Excepting that Sangster's No. 1 and Carpenter's Express have flowers of a whiter colour, there is absolutely not the shadow of a difference between these four sorts. They are the same in height (3½ feet), were in flower May 20th; style of growth, flavour of the peas, shape of pods, all alike. One noticeable feature in these varieties is, that several successive gatherings may be made day after day. These four sorts are quite ten days later, under ordinary cultivation. The five early varieties were fit for use June 3rd; these four later sorts not until the 13th. No doubt much depends upon locality, snug and warm borders, dry subsoil, and other similar contingencies.—A. HENDERSON & Co., *Pine Apple Place, Edgware Road.*

PERMIT me to say a few words respecting early Peas. I sowed Mr. W. Paul's Tom Thumb in a gentle heat on the 20th of February, planted out the young plants on a south border on the 20th of March, and gathered on the 23rd of May.

Carter's First Crop variety was sown on the same day, and I treated the plants precisely the same in every respect. I gathered from them on the 29th of May.

Sangster's No. 1 sown at the same time, and treated precisely the same in every respect, were gathered from on June 4th. Therefore, I consider Mr. W. Paul's Tom Thumb the earliest Pea we have.

Another excellent quality in favour of Tom Thumb is, it requires no sticks. The plants grew with me about 1½ foot high, and although they commenced fruiting at the time

I have named, they are at this moment covered with flower; the case is quite different with the two other varieties named, for they have both done bearing, and not a bloom is to be seen on them.—J. HILL, *The Gardens, Poles, Ware, Herts.*

NOTICING several communications respecting the earliest varieties of what are called new kinds—viz., Dickson's First and Best, Sutton's Ringleader, Carter's First Early, Carpenter's Express, Essex Rival, Dillistone's Early, and Sangster's No. 1, a trial was undertaken on purpose to prove which is the earliest. Two rows of each were sown on the 7th of February on a south border, and treated exactly the same.

Dickson's was the first to flower and to be gathered from; all the pods, too, were double. It is a kind quite distinct from any of the others. Next came Sutton's Ringleader, Dillistone's Early, and Carter's First Early. These three I consider the same variety, mostly single-podded, and all of the same height.

Next came Carpenter's Express and Sangster's No. 1. These two are decidedly the same kind.

The latest of all was Essex Rival, 4 feet.

The only kinds I intend to grow for early crops are Dickson's First and Best Early and Sangster's No. 1.—E. WELCH, *Palace Garden, Armagh, Ireland.*

WINTERING PLANTS IN A ROOM.

It may, perhaps, interest some of your readers who, like myself, have a small garden, but no greenhouse, pit, frame, or other convenience for wintering plants, to hear that I have now in my garden the following, all wintered in a room—viz., 33 scarlet Geraniums, 8 white Geraniums, 3 Fancy Geraniums, 45 yellow Calceolarias, 3 Lobelias, 1 Verbena, and some old plants of Calceolarias, scarlet Geraniums, and scented Verbenas. Excepting the old plants, the whole are cuttings made by myself as nearly as I could according to the directions given from time to time in your Journal. During the winter they were on shelves across one window only. This window is in a room which never once had a fire in it, and which faces the east; it is also shaded from the south by a projecting part of an adjoining house. I was able to attend to them myself nearly the whole of the time.

In addition to what I saved there were a number more which died, mostly Verbenas and Lobelias, these, as I suppose, not requiring the same treatment as the others; but from the very small means at my command I was only able to give one sort of treatment to all. The dry air of a room was not very favourable for raising cuttings at all. Next winter I hope to try again, and by making cuttings only of those sorts which did best, to save a larger proportion of plants.—V. G. C.

REPORT ON THE BEDDING PELARGONIUMS GROWN AT CHISWICK, 1864.

By THOMAS MOORE, F.L.S., SECRETARY TO THE FLORAL COMMITTEE.

SERIES II.—ZONATE VARIETIES.

(Continued from page 451.)

3. FLOWERS SALMON OR FLESH-COLOUR.

Auricula ** (Bull).—Moderately vigorous; leaves dark zoned; flowers shaded salmon, rather effective. It also proved free and good, deserving of two marks, as grown under glass.

Aurora *** (Hally).—Dwarf habit; leaves distinctly dark zoned; flowers free flesh colour.

Chione (Rollisson).—Moderately vigorous habit; leaves with dark zone; flowers flesh colour with deeper centre.

Enamel (Hally).—Moderately vigorous habit; leaves darkly zoned; flowers of a deep salmon flesh colour with a white eye.

Enchantress (Bull).—Vigorous habit; leaves broad, with a dark zone; flowers deep flesh colour. Indifferent under glass.

Ernest (Bull).—Moderately vigorous habit; leaves with dark vandyked zone; flowers showy, of good form deep

Fantasy ** (Bull).—Moderately vigorous; leaves with dark zone; flowers flesh coloured with deeper salmon eye, freely produced and showy.

Madame Chardine (Low & Co.).—Vigorous habit; leaves with dark zone; flowers flesh colour with deeper centre.

Madame Lemoine (Bull).—Moderately vigorous; leaves with an indistinct zone; flowers pale salmon pink.

Prince of Hesse ** (Ingram).—Moderately vigorous habit; leaves with dark zone; flowers salmon pink with deeper centre.

Prince of Wales (E. G. Henderson & Son).—Moderately vigorous habit; leaves dark zoned; flowers salmon colour, paler at the edge.

Princess Mary *** (The Society).—Vigorous habit; leaves broad and flat with a very broad dark zone; flowers in the way of those of Prince of Hesse, shaded salmon pink, of fine form, and produced in good trusses. A seedling raised at Chiswick.

Rosamond ** (Bull).—Moderately vigorous habit; leaves with broad dark zone; flowers free, the trusses compact, the blossoms deep salmon pink, of fine shape.

St. Fiacre *** (Salter).—Rather dwarf habit; leaves with a deep dull zone; flowers abundant, salmon pink, deeper in the centre. Also free, showy, and of the first quality as a pot plant.

Souvenir du 8 Juin ** (Van Houtte).—Rather dwarf in habit; leaves marked with a dull zone; flowers freely produced, flat, and of good form, salmon pink, deeper towards the centre, which forms a small pale eye. This was only grown as a pot plant, and received two marks for its quality under glass.

4. FLOWERS WHITE.

Eugène Dufoy (Carter & Co.).—Vigorous habit; leaves with broad dull zone; flowers blush white. Of no particular merit under glass.

Flag of Truce (Wills).—Vigorous habit; dark-zoned leaves; flowers blush white.

Lady Blanche (Salter).—Moderately vigorous habit; leaves with a dark vandyked zone; flowers blush white.

Madame Cornelissen (Salter).—Dwarf habit; leaves dark zoned; flowers white, with a broad salmon eye.

Madame Vaucher *** (Low & Co.).—Vigorous habit; leaves with dark zone; flowers in good trusses, white, changing to blush. The most useful of the whites grown in the collection.

Purity (Bull).—Vigorous habit; dark-zoned leaves; blush white flowers. It proved a shy bloomer under glass.

Snowball (Carter & Co.).—Dwarfish vigorous habit; leaves dark zoned; flowers white, in the way of Mrs. Vaucher, but the plants were not in character. It bloomed better in pots but the flowers were set too close down to the leaves.

The Swan (Bull).—Vigorous habit; leaves with dark vandyked zone; flowers white, in large trusses, sometimes showy. Under glass it bore long-stalked trusses, and was in some states a rather desirable variety.

White Perfection *** (J. F. Chater).—Vigorous habit; leaves marked with a broad zone of dull brown; flowers blush white. Under glass this proved of the first quality, as indicated by the above marks; the flowers being pure white, of good shape, and thrown well up.

5. FLOWERS WHITE OR PALE-COLOURED WITH SALMON EYE.

Amelina Grisau *** (Salter).—Moderately vigorous habit; leaves marked with a broad dark zone; flowers large, of fine shape, white, with a bright salmon eye. Altogether a very fine sort, with the colours bright and well-defined.

Beauty *** (E. G. Henderson & Son).—Moderately vigorous habit; leaves marked with a dark zone; flowers of very fine shape, white, with a salmon-coloured eye, forming an edging to the base of the petals. One of the best of the race.

Bel Demonio (Carter & Co.; Williams).—Vigorous habit; leaves with broad brown zone; flowers with salmon-coloured centre. It proved to be shy both out of doors and under glass.

Display (Williams).—Moderately vigorous habit; leaves with broad dark zone; flowers white, with salmon eye.

Erin-go-Bragh (Bull).—Moderately vigorous habit; leaves marked with a broad dark zone; flowers white, with salmon eye.

Eugénie Marnard *** (Salter, E. G. Henderson & Son, Turner).—Moderately vigorous habit; leaves with a broad dark zone; flowers white at the edge, with salmon centre, showy, well-formed, and produced in good handsome trusses. This was received also under the name of *Madame Rudersdorff*. It was of the first degree of merit as a pot plant.

Eva (Bull).—Vigorous habit; leaves with broad dark zone; flowers white, with pink eye.

Fascination (Williams).—Moderately vigorous; leaves with a dull zone; flowers salmon, paler at the edges.

François Desbois *** (E. G. Henderson & Son).—Moderately vigorous habit; leaves with a dark submarginal zone; flowers white, with a bold, deep, salmon eye, freely produced. A good pot plant, but not equal to *Amelina Grisau*.

Henri de Beaudot (Low & Co.).—Vigorous habit; leaves dark zoned; flowers white, with deep salmon centre.

Léonie Nivelet *** (Van Houtte).—Moderately vigorous; leaves broad, marked with a dark zone; flowers of good form, white, with salmon eye, in fine trusses. It proved also to be a first-rate pot plant, with fine elevated trusses of salmon-flesh flowers, paler and whitish towards the edges.

Loveliness (Wills).—Moderately vigorous; leaves dark zoned; flowers salmon, with pale edges.

Marie Labbe ** (Van Houtte).—Moderately vigorous; leaves with a dark centre or zone; flowers of fine shape, white, with a pink eye formed by markings at the edge of the petals near their base; it resembled *Beauty*.

Mrs. Moore (Wills).—Vigorous habit; leaves dark zoned; flowers white with salmon eye.

Nelly (Bull).—Vigorous habit; leaves with very broad dark zone; flowers white, with salmon eye. It proved a good free-blooming pot plant, in the way of *Eugénie Marnard*, but too much resembling it to be also required.

Neptune (Bull).—Vigorous habit; leaves marked with a dull zone; flowers white, with salmon eye.

Pauline (Bull).—Vigorous habit; leaves marked with a broad black zone; flowers white, with salmon eye. Tolerably effective under glass.

Pretty Polly (Wills).—Moderately vigorous; leaves with a dark centre or zone; flowers white, with pink centre.

6. FLOWERS ROSE PINK.

Aglaia (Salter).—Vigorous habit; leaves with broad dull zone; flowers of good shape, rose-pink, white at the base.

Amy ** (Rollisson).—Vigorous habit; leaves with a dark vandyked zone; flowers in fine trusses, large, pale rose pink, with a white base.

Chancellor (Bull).—Moderately vigorous habit; leaves with an indistinct green zone; flowers rose pink, with a white base.

Charmer (Bull).—A good rose pink, paler than *Madame Cassier*. It was only grown as a pot plant.

Eve *** (Bull).—Of rather vigorous habit; leaves marked with a broad dull zone near the centre; flowers large, in large trusses, of fine shape, light rosy pink with white base. A very fine pale variety in the open borders, and of nearly equal merit as grown in pots.

Flora *** (Van Houtte).—Moderately vigorous habit; leaves with an indistinct green zone; flowers large, pale rosy pink or peach, white at the base, and of fine shape. A fine, large, pale peach-coloured sort, grown only under glass, under which conditions it was of first-class quality.

Helen Lindsay *** (Carter & Co.).—Of rather vigorous habit; leaves with a broad indistinct zone near the centre; flowers abundant, in fair-sized trusses, deep bright rose pink. A very lively and bright-coloured variety.

Madame Cassier ** (Van Houtte).—Moderately vigorous habit; leaves broad and very flat, marked by a dark zone; flowers deep rose pink, with white base, and of good shape. Under glass it was of second-rate merit, and the leaves became indistinctly zoned.

Minnie ** (Rollisson).—Moderately vigorous habit; leaves with a dark zone; flowers in good trusses, pale rose pink with a white base.

Mrs. Whitty (Carter & Co.).—Moderately vigorous habit; leaves marked with a dull, broad, unequal zone; flowers deep rose pink, white at the base. Much in the way of but not so good as *Helen Lindsay*.

Rose Rendatler *** (Downie & Co.).—Moderately vigorous habit; leaves with a dark vandyked zone near the centre;

flowers lively rose pink, with a white base, of good shape, and borne in compact trusses. A fine sort both for beds and pot culture.

Roseum Nanum (Salter).—Dwarf, free habit; leaves dark zoned; flowers of good shape, rose pink, white at the base. A useful free-flowering variety.

SERIES III.—MARBLED-LEAVED ZONATE VARIETIES.

Dayspring (Dixon).—Moderately vigorous habit; leaves with yellowish green radiating centre, and no dark zone; flowers deep scarlet. A rather pretty variety, and quite distinct in its foliage.

Lady of Loreto (E. G. Henderson & Son).—Moderately vigorous spreading habit; marbled leaves; flowers cerise-scarlet.

Pigmy (Hally).—Dwarf habit; leaves marbled; flowers scarlet.

Prince Arthur (Hally).—Moderately vigorous spreading habit; leaves marbled and very darkly zoned; flowers light scarlet.

Rose of Lee (Hally).—Vigorous habit; leaves marbled; flowers cerise scarlet.

Sheen Rival *** (Kingham).—Moderately vigorous habit; leaves darkly zoned and marbled with light green; flowers bright light scarlet, of good form, in fine trusses.

SERIES IV.—NOSEGAY VARIETIES.

1. LEAVES ZONATE.

Beaton's Pet (Carter & Co.).—Very dwarf habit; leaves marked with a dull zone; flowers loose, in small trusses, of a bright rosy crimson. The plant was in a weak condition.

Carminatum Improved (Carter & Co.).—Moderately vigorous habit; leaves indistinctly zoned; flowers crimson magenta.

Carmine Nosegay (E. G. Henderson & Son).—Moderately vigorous habit; leaves with a faint narrow green zone; flowers deep cerise, in moderate trusses.

Cybister *** (Carter & Co.).—Full vigorous habit; leaves large, with dull olive zone; flowers in large trusses, well thrown up, narrow petaled, scarlet. It is of a very effective colour, brighter and lighter than *Stella*, but with longer and narrower petals.

Imperial Crimson (Turner).—Dwarf spreading habit; leaves with a faint narrow green zone; flowers loose, narrow-petaled, in small trusses, magenta rose.

Lady Cullum ** (Carter & Co.).—Dwarf habit; leaves marked with an indistinct zone; flowers free, loose, lilac pink, with a white base.

Lord Palmerston ** (Carter & Co.).—Dwarf and moderately vigorous habit; leaves with very faint zone; flowers in small trusses, the plant being weak, cerise-scarlet, changing to magenta.

Madame P. Gaspard (Salter).—Moderately vigorous habit; leaves with an indistinct green zone; flowers thin and loose, deep rose pink.

Magenta ** (E. G. Henderson & Son).—Vigorous habit; leaves broad with a darkish vandyked zone; flowers distinct and showy, of a semi-nosegay character, the trusses thrown well up, and freely produced. Approved chiefly for colour.

Merrimae *** (Salter).—Moderately vigorous habit; leaves with a broad dull zone; flowers in immense heads, deep cerise or carmine rose, the blossoms broad-petaled for one of the nosegay race. It was grown only in pots, and was in this way quite first-rate.

Merrimae ** (Carter & Co.).—Moderately vigorous habit; leaves with narrow olive zone; flowers broad-petaled, in moderate trusses, cerise rose.

Monitor ** (Carter & Co.).—Rather dwarf spreading habit; leaves lobed, with a dull brown zone; flowers large and broad for one of the nosegay race, dull orange scarlet. Desirable from its colour.

Red Nosegay (Taylor).—Moderately vigorous habit; leaves with faint narrow green zone; flowers cerise scarlet, in moderate trusses.

Rival Nosegay (Carter & Co.).—Moderately vigorous habit; flowers large and broad-petaled as a nosegay, in good trusses, of a deep magenta shaded with crimson. Not one of the semi-nosegay race.

Stella *** (E. G. Henderson & Son).—Vigorous habit; leaves with dark zone; flowers in bold trusses, broader-petaled than *Cybister*, and of a deeper scarlet. One of the finest of all *Pelargoniums* for effect.

2. LEAVES VARIEGATED WITH WHITE.

Variegated Nosegay *** (Turner).—Moderately dwarf habit; leaves whitish at the edge, cupped; flowers abundant and effective, but loose, cerise pink.—(*Proceedings of the Royal Horticultural Society.*)

(To be continued.)

STOPPING NEWLY-PLANTED VINES.

I PLANTED in the early part of February six strong Vines, every shoot showed fruit, which I, of course, took off. These Vines have now reached half way up the lights, and are looking strong and flourishing. A gardener advised me to stop the leading shoot, but my own impression is, that the leader ought to be allowed to reach the end of the light, and then be stopped some time in August. Another question I would wish to ask is, Whether the tendrils of the leader should be taken off?—H. B. DU PRÉ.

[Stop the Vines when they have reached about three parts of the way up the rafters. It will cause them to grow more robust from the base and upwards than when the cane is allowed to grow to the top of the house before stopping. It often happens, in consequence of the sap always flowing to the highest point first, that the Vine swells out largely when it is about half way up the house, whilst from that point downwards it has a very pinched appearance, the stopping is, therefore, necessary to cause the Vine to grow more proportionate. It also helps the ripening process gradually from the base upwards after the first stopping. As soon as the Vine has grown about 3 feet stop it again, and as soon as it reaches the top of the house, stop it again. The tendrils should be pinched out, and the laterals should be stopped at the second leaf.]

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

CYPRIPEDIUM CONCOLOR (One-coloured Lady's Slipper).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—Native of Moulmein. Flowers lemon-coloured. Leaves beautifully variegated with rows of crescent-shaped dark green spots.—(*Bot. Mag.*, t. 5513.)

VELLOSLA CANDIDA (White Velloso).—*Nat. ord.*, Hamoraceæ. *Linn.*, Polyandria Polyandria.—Native of Brazil.—(*Ibid.*, t. 5514.)

DENDROBIUM HEDYOSMUM (Sweet-scented Dendrobium).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—Introduced from Moulmein, by Messrs. Low & Co., Clapton Nursery. Flowers white with orange lip; scented like the Wallflower.—(*Ibid.*, t. 5515.)

ACANTHUS MONTANUS (African Mountain Acanthus).—*Nat. ord.*, Acanthaceæ. *Linn.*, Didynamia Angiospermia.—Native of Fernando Po. Flowers lilac.—(*Ibid.*, t. 5516.)

RAILLIARDIA CILIOLATA (Ciliate-leaved Raillardia).—*Nat. ord.*, Compositæ. *Linn.*, Syngenesia æqualis.—Native of Hawaii, one of the Sandwich Islands, at an elevation of 10,000 feet. Flowers yellow, with prominent crimson anthers.—(*Ibid.*, t. 5517.)

ANEMONE (HEPATICA) ANGULOSA (Angle-leaved Hepatica).—*Nat. ord.*, Ranunculaceæ. *Linn.*, Polyandria Polygynia.—Native of Hungary. Flowers purplish-blue. Anemone Falconeri, recently discovered in Kashmir, so closely agrees with Hepatica in almost all essential characters, that the last-named genus has been abolished.—(*Ibid.*, t. 5518.)

RHODODENDRON.—*Princess Alexandra*, a cross between *R. jasminiflorum*, and a species never sent out. Raised by Messrs. Veitch. White with a pink tinge.—(*Floral Mag.*, pl. 245.)

ZONALE GERANIUM.—*Venus* (Halley's). Raised by Mr. Halley, nurseryman, Blackheath. Awarded a first-class certificate by the Royal Horticultural Society. Dwarf and compact; flowers bright scarlet. Leaves yellowish green centre, black zone, and dark green margin.—(*Ibid.*, pl. 246.)

HEPATICA ANGULOSA.—See above, *Anemone angulosa*.—(*Ibid.*, pl. 247.)

DOUBLE-FLOWED MIMULUS.—Raised by Mr. Bull. Orange and yellow with dark crimson spots and blotches.

PELARGONIUM.—*Amy Hogg*. One of the late Mr. Donald Beaton's seedlings, and now possessed by Mr. Wm. Paul, Waltham Cross Nursery, and one of the best of the series. Truss large, deep carmine; leaves with a dark green zone; plant strong-growing and spreading.—(*Florist and Pomologist*, iii., 118.)

MY PLANTS,

AND HOW AND WHERE I FOUND THEM.—No. 1.

"The increasing blast roared round the beetling rocks;
The clouds, swift-winged, flew o'er the starry sky."

We will now quit for a time the wild and romantic hills and dales of North Staffordshire, with their picturesque scenery and immense resources of mineral wealth; we will take leave of its towns, with their numerous manufactures, for an exploring tour in the neighbouring island of Jersey. I would, however, advise intending travellers to select the calm and bright summer months for their trip, and not expose themselves to the vagaries of the tides or the violence of the storms in this part of the Channel, as we did at so inclement a time of the year as January.

It was an eventful evening, that in 1860, on which we quitted London, and securing a railway carriage for our own and children's exclusive benefit, were whirled away through the unsatisfactory and mysterious darkness of the night, right onward to the port of Southampton. The bairns, warmly ensconced in railway rugs and shawls, slept soundly. Childhood's happy confidence, and full trust in the protecting care of the parents who journeyed with them, dispelled all fear of the noise and darkness which surrounded them. Let us look for a moment at their peaceful faces by the small light of the carriage lamp, and learn that difficult lesson of faith and trustfulness in the Universal Father in those dark days which come more or less to all earth's children, and more especially do I address my own sex; for

"Do I not know
The life of woman is full of woe?
Tolling on and on
With breaking heart, and tearful eyes,
And silent lips, and in the soul
The secret longings which arise,
Which this world never satisfies!
Some more, some less, but of the whole
Not one quite happy—no, not one!"

Still, in the midst of it all, "*Nil Desperandum*" is a very good motto for a good wife, and also for a good Christian. *Nil Desperandum!* Hope on, Hope ever! and have the children's trust on your journey through life, and you shall have also their calm awaking at the end of it.

Immediately after our arrival at Southampton we found ourselves on board the steamer appointed to convey us to the island of Jersey, which island we hoped to reach at day-break. In consequence of the roughness and severity of the weather the mails had been detained in Southampton the previous night, and many were the surmises as to whether our boat could with safety make the passage even then. The captain, however, was determined to run across; and my husband, the greater part of whose youth had been passed at sea, only saw a night of pleasant excitement before him, and cordially joined the captain in his wish to proceed. What was a storm to him?—he who could sit as comfortably whistling upon the mainyard as chatting in the easy chair at home. So the steam was got up, and away we started. Never shall I forget my first apprenticeship to the sea, or how dearly I "paid for my footing" within the realms of Neptune. Having quietly demolished one's chicken pie and visibly decreased the ham, how pleasant to sit with one's feet on the fender, and having discussed the births, marriages, and deaths in the morning paper in genuine feminine style—read everything, in fact, excepting the columns devoted to politics, and even if it is a wet morning condescended to peep at these—we turn over the paper, and our eye catches the advertisement, "*To Jersey and Back*," "*To St. Malo and Back*," &c., for some nominal sum. How smoothly flow the words! and no sooner have you read this invitation than in imagination you are borne on the back of "the swallow flying south" to the "gilded eaves" of some fair one in this island of warmth and love. But it is a very different thing to picture all this so prettily, or even to remember the gilded ginghamed, the sympathies with the

gallant crew of a weather-beaten boat, or to read of the glorious struggle of men and bark, both fighting the fight of the winds and the waves, and of their timely deliverance, of the cheer of welcome and "thank God" feeling which greeted the well-nigh failing hearts and hands as they quitted their boat for the friendly shore. It is a different thing, I say, to picture all this in one's mind's eye, and to experience the same yourself. I had made up my mind to eschew all threatenings of such a vulgar attack as sea-sickness. I have a great opinion of the superiority of mind over matter, and of the influence which a strong and well-regulated will has over our physical infirmities; so much do I feel satisfied of the truth of this theory, that were this the place for such a discussion I would strenuously urge upon young mothers to act upon this suggestion themselves, for the future well-being of those who have not as yet seen the light. If children naturally inherit the hasty temper, the untidy habits, the loose principles, &c., of the parents, surely by the mother's strict watchfulness to curb her own temper, to be exact, methodical, kind-hearted, checking in herself frivolous thoughts and actions, she has done much to make her offspring a great and good man or woman.

But I am moralising instead of pursuing my account of the bodily sufferings which we underwent. Pain certainly can be borne with courage and a certain amount of placidity; but as the Staffordshire people would say, "My word!" it might be "a caution to the Greeks," when sailors who have been inured to all weathers from childhood begin to make preparations for a hurricane in the Channel, and to wonder and speculate upon how many hours the mails will be delayed. It considerably lessens the firmness with which you entered your cabin—queer feelings and qualms come over you; and in spite of your sternly-believed theory with regard to the mental powers, you are helplessly engulfed in that horror of horrors—sea-sickness. I must do the stewardesses of the Channel-island boats the justice to say that on all subsequent occasions I found them civil and attentive; but in the present instance we fell into the hands of a cold-blooded ogress, who evidently thought that all possible discomforts and illnesses were the proper accompaniments to a trip to the islands, and all the fees she could get her own just due for the pleasure which her society might afford us. The children she treated like trespassing dogs or cats, and disposed of them as quickly as possible in the various little snuggeries within her den. This done, and a basin given to each lady, she seemed to consider her duty accomplished, and immediately solaced herself with something, to which, assisted by our olfactory nerves and the vision of a black bottle, we gave a deep meaning. I have no doubt she herself became painfully aware of the all-powerful influence of this dark spirit upon her when, about a fortnight after the date of which I am writing, she fell from the companion ladder and broke her leg. Be still, revengeful heart of mine! What if she did take your baby of two months old from you, and, stowing it away as if it were some part of the luggage, lay it in its narrow quarters at the side of the ship, and in spite of your entreaties and helpless condition, refuse to bring it to you! What if in that fearful storm you vainly asked her to see to the safety of the child! What if her reply still rings in your motherly ears—"What business had ladies to bring babies at all out on such a night as this for? She'd answer for it, it wouldn't want rocking—the ship'd do that for it. Babies never came to any harm!" Do you feel a smack of pleasure that retribution so quickly followed her? Be still, revengeful heart of mine! An officer's lady threw herself just before the entrance to the place where "my darling lay sleeping," and I saw no more of it until the day dawned.

Prostrate and helpless I lay upon the floor of the ladies' cabin with a pillow for my head. My husband, although a medical man, was not allowed to enter this sanatorium, although he several times offered his services. For the first two hours after going on board I could manage to get into the saloon, but I soon got past that. Upon making some remark as to the roughness of the weather, his answer was very short—"Yes, it's blowing hard; it's what the sailors call a 'stinker.'" This last inelegant but expressive word awoke all my fears. The ship creaked, and strained, and creaked again. Boom went a wave on the right side, and down went the ship on the left; up she came again, and

creak went the planks. I began to think of all my relations, and to wish I had taken leave of them before joining the shrimps and mermaids. Just as I was thus pondering, away went all the basins to the other side of the vessel, and in an instant after back they rolled again. The cabin lamp went out, and we were all left in perfect darkness. A noise overhead reminded us that we were still in the land of the living, and not in the shades of which Dante speaks. The cabin door had been closed, but the stern stewardess entered—she whose heart relented only before the black bottle and its attendant spirits. Commenting upon the weather in no very choice terms, she relit the lamp. I asked what they were doing up above. "Oh, only covering the skylight, because the sea washed over it, and it might come into the cabin." *Might* come into the cabin! Then there was a possibility of our going to the bottom. I felt already as if I were slowly, slowly sinking. I thought of Miss Edith, and of Uncle 'Zekiel's speech to her when in much the same predicament: "I'm everlasting sorry I took you away from your father. You'd been a sleepin' safe and sound in your silk coverlets there instid of being pitched about by this infernal tempest."—ALICE.

NEW BOOK.

A Handbook of British Plants, designed especially for Schools, Science classes, and Excursionists. By W. LOWNDES NOB CUTT. London: Longman & Co.

THIS is a very well planned, correct, small, and cheap book. It is a good teacher how to recognise a plant, yet may be found useful even by a professed botanist, if he has it in his pocket during his rambles after plants. We recommend it to our readers, and the only improvement we can suggest is the addition of those great facilitators of reference, an index of the generic names, and another of the English names.

ZINC LABELS AND INK.

THE French chemist Braconnot made the recipe of an indelible ink, known to write on zinc. It consists of one part crystallised verdigris, one part of sal ammoniac, and half a part of lamp-black, thoroughly mixed and pulverised. To this powder must be added ten parts by weight of distilled or rain water. It is the ink recommended in pomological books and journals. Sometimes the direction is given to keep the bottle always inverted, in order to prevent the ammonia from escaping. Any one who understands the alphabet of chemistry knows that this is poor advice, based on ignorance; there is no gas in the mixture ready to escape.

Dr. Rudolph Boettger, of Frankfort, of gun cotton notoriety (Boettger and Schoenbein), was the first in Germany that called the attention of nurserymen and pomologists to it, in his contributions to natural philosophy. This took place as early as 1837. The author showed that lamp-black is of no use whatever in the mixture; it ought, therefore to be omitted, being unfit to be incorporated in it, and having nothing to do with the colour of the ink. This was in 1841.

It is true that the ink is indelible, but it is grey instead of black. It requires, besides, if not much at least some skill in chemical manipulations, and a mortar for trituration; it is also somewhat expensive.

Being very fond of both natural philosophy and chemistry, I was, a number of years ago, engaged in some galvanoplastic experiments, when I had occasion to prepare Braconnot's ink. I disliked its colour, and, after some reflection on the cause of its action on the zinc, I concluded to try solutions of other salts of copper, and it was natural that I should dip my pen immediately in the solution of sulphate of copper used for my galvanoplastic experiments. Those conversant with such experiments will know that the solution contained a small quantity of free sulphuric acid. I was not a little astonished to behold the jet black colour of the letters written with it. After it was dry I soaked the piece of zinc for twenty-four hours in water, I kept it for three hours in boiling water, and exposed it to the action of a violent rain and snow storm, then raging; I then gave it

some boys to rub it out with a piece of flannel. It proved to be entirely indelible.

1. Preparation of the Ink.—Dissolve one part of blue vitriol (sulphate of copper) in ten parts of rain water, by mixing them in a common vial and shaking them occasionally. One or two drops of sulphuric acid may be added, but this is not absolutely necessary. Use a goose-quill, not a steel pen, for writing.

2. Preparation of the Zinc.—Take thin sheet zinc, and make superficial cuts in it with a broken or shoemaker's knife, against a ruler or a piece of lath or board, to get the cuts straight. By bending the zinc it breaks very easily and smoothly along the cut or scratch. Divide the pieces so obtained into as many labels as you may wish.

The zinc pieces must then be scoured with some fine sand and water. It facilitates the operation if a little salt, vinegar, or muriatic acid is added to the water. Muriatic acid is best in the proportion of one part of it to three parts of water. When bright, put them in rain water, and leave them there till wanted. Rub them dry with a piece of cloth, and write upon them with a quill-pen, as directed. When dry fasten them to the trees. After a few days the names so written will be covered with a white powder; moisten your finger and remove it. The writing will last as long as the zinc itself.—(*American Gardener's Monthly*.)

WISE FRUIT TREES.

I WAS talking to-day (April 29) with a Huntingdonshire cottager, and was saying how cold the day had been after our previous hot weather. "Yes," said my friend, "you musn't expect the summer to come all at once. The wise tree would have told you better than that. I was up agen the hall this morning, and saw those two wise trees that grow nigh to the fish-stews, and they hadn't put out a mossel o' show." "And what tree may the wise tree be?" I asked. "It's what some folks call the Mulberry," was the reply; "but the wise tree is the name as I've always known it by ever since I was a child." "And why do you call it the wise tree?" "Why, because it isn't silly like some trees as puts out their leaves early, and then gets nipped; but the wise tree, on the contrary, always waits till the frosses has gone right away, and aint to be deceived by a stroke o' fine weather coming early in the season. But when it's sartin sure that it be fine weather and well settled, then it puts out its leaves. O yes, sir, you may rest content on the wise tree telling you when you may be safe against frosses."—(*CURBERT BEDE in Notes and Queries*.)

[This attribute of the Mulberry is mentioned by Pliny, who says, "Of all cultivated trees, it is the very last to bud, and it does not do so until the cold weather is entirely passed: hence it has been called the wisest of trees." Even the *Heralds* have accepted this, for old Guillim remarks that "this fruit is an hieroglyphic of wisdom, whose property is to do all things in opportune season." The Court-Pendu-Plat Apple is called in some places "The Wise Apple," because it opens its blossoms later than any other variety, and, consequently, they are less liable to be injured by frosts.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

IF the present dry weather continue recourse must be had to watering; and this, if not persevered in with a liberal hand, is of very little benefit unless means are used to prevent evaporation. This should be done even with Peas and Beans, and indeed in every case where possible. The vegetables just mentioned will cast nearly all their flowers if water is not supplied; others, such as Cauliflowers, will not attain half the size they should do; while Celery will soon run to seed. All vegetables the roots of which are edible require water frequently, otherwise they become hard and of a disagreeable flavour. Seed-beds to be shaded with mats, which will prevent the necessity of so frequently watering them, and will also be beneficial to the young seedlings in a much greater degree than if left exposed to the sun, even though the roots were moist. Beans, make another sowing, and be sure to immerse the seed in water and water

the drills; pinch off the tops of those that are forming their pods. Broccoli, the seed-beds of the late crops to be watered, as also those that have lately been pricked out; none to be permanently planted until after a fall of rain. Cucumbers, the plants will require a good supply of water two or three times a-week during the present hot weather. Sprinkle them every afternoon, which will greatly refresh them. Keep them shaded during the middle of the day. Dwarf Kidney Beans, make a good sowing for the autumn. Water the drills previous to covering them. Peas, sow some of the quick-bearing kinds for autumn use; steep the seeds, and water the drills as for Beans. Continue to stick the advancing crops. Radishes, make a sowing for succession; if the weather continue dry water the ground immediately after sowing, and lay mats on it to prevent evaporation as much as possible. Scarlet Runners, a sowing may yet be made to come in late in the autumn; stick the advancing crops. Turnips, it will be necessary to water the late sowings, and every time after doing so sprinkle them with dust of any kind to prevent the ravages of the fly. Another sowing to be now made. The present season has been an excellent one for destroying weeds, and equally so for ripening their seeds; therefore every one should be eradicated when of small size, as by so doing it will save much future labour. Attend to the thinning of the crops, and keep the soil loose where it is possible to do so.

FRUIT GARDEN.

During the present month every attention should be given to trained fruit trees. All wall trees, especially, should be gone over in time, and the shoots thinned and stopped to admit air and light amongst the fruit and young shoots, which will greatly assist in the formation of fruit-buds for the following season. Old Pear trees, in particular, that are unfruitful should be subjected to this treatment. Keep Peach trees free from green fly, and dust sulphur on shoots affected with mildew. Use the garden engine occasionally in warm weather to clean the trees and prevent red spider.

FLOWER GARDEN.

Trimming, staking, and pegging down must be well followed up at this period where neatness and order are essential. See that sufficiently strong stakes are applied to plants with heavy foliage and of gross habit, such as Dahlias, Larkspurs, Hollyhocks, Phloxes, and tall-growing Asters. Keep Roses as much as possible free from insects, and if time can be spared, dead blooms should be removed from Rhododendrons. Let Carnations and Picotees be layered as soon as the shoots are in a proper state for that purpose. They make very useful border flowers and are much prized in a cut state. See, therefore, that plenty of them are secured for next season. Propagate China Roses, Pinks, Double Rockets, &c. If Stocks, China Asters, &c., are not already planted out where they are to flower, take advantage of the first shower to do so, and attend to them with water for a few days until they become established. On light dry soils many things will be greatly benefited by a thorough soaking of water, especially coniferous plants, most of which make but one growth during the season, and when rapid growth is wished, they should be encouraged at the proper period. This attention will be especially necessary in the case of young specimens growing on lawns. Ranunculuses, Tulips, Hyacinths, &c., should now be taken up, and after they are dried stored away in some dry room.

CONSERVATORY AND GREENHOUSE.

The borders in the conservatory will now require a large supply of water to keep them in a sufficiently moist state, and the soil should be occasionally examined, especially near strong-growing plants, for the amount of moisture absorbed by these at this season is greater than many persons imagine. Whenever water is applied the borders should be thoroughly soaked to the bottom, and where it can be done without annoyance to the family manure water should be given to such plants as are known to enjoy it; this should be furnished in moderate quantities. If red spider make its appearance upon any of the specimens growing in the borders the pot plants in flower should be moved as soon as possible, and the infested subjects given a thorough washing with the engine, and this should be repeated at short intervals until the enemy is thoroughly subdued. Attend frequently to the growth of twiners, and

prevent their getting into a state of entanglement. Cut down Pelargoniums after blooming, and employ the branches for cuttings; the old stools, after a few weeks' rest, may be turned out of their pots, the soil shaken from them, and repotted in smaller pots. By pinching off the bloom-buds of the young Pelargoniums a late bloom may be secured. Perpetual and Bourbon Roses which have been forced should be placed in a cool situation with the view of repressing further activity. After a season of rest the soil should be shaken from them, and all decayed roots removed; after which they should be repotted in fresh rich earth, and removed to the protection of a cold pit and there plunged. As soon as the Camellias, Azaleas, and other plants shall have been placed in summer quarters out of doors, painting and other repairs required by any of the plant-houses should be commenced, as they can be more conveniently done then than at any other season. Pay attention to the plants for autumn and early winter decoration; let them have plenty of pot-room, good rich compost to grow in, a moist atmosphere, and plenty of space for perfect development.

STOVE.

If among these plants there are any sickly or badly-rooted specimens they should be frequently examined for red spider, otherwise they will become a nursery for this pest, and from them it will soon spread to adjoining plants. See that young growing stock is not allowed to suffer for want of pot-room. Attend carefully to watering, giving manure water to all plants in vigorous growth. Gardenias and other things that have been in the conservatory while in bloom, should be replaced in heat as soon as their beauty is over, in order to allow time for ripening their growth before short days and dull weather arrive. Orchids in a growing state will require encouragement. Shading must be promptly attended to when bright sunshine occurs.—W. KEANE.

DOINGS OF THE LAST WEEK.

WOULD that we could chronicle a fourth of them in these broiling days, with a bright sun, and the thermometer ranging above 80° at midday, and with myriads of things wanting attention, and last year's drought ever coming before us, when we would attempt to give some things a soaking only once a-week, instead of three times as rightly recommended by our friend Mr. Keane. We presume he has the Water-works Company to depend on. What would our old friend think of covering up his pet plants in a wood for a couple of months, as the only chance left him of keeping them alive? Gardening under difficulties is not all a loss, if we are thus induced to make the most of our difficulties. In these days a man must be very little, who can feel over-proud of anything he can do. We shall never forget meeting an old friend with whom, years before, we had lodged in the suburbs of London, as after the first friendly greetings, he exclaimed at a grand horticultural show, "Ah, man! does not this take the conceit out of us?" And no doubt of it. It does not suit many gentlemen to encourage their gardeners to grow for exhibitions, but they certainly stand in their own light if they do not encourage their gardeners to see some of the best of them, as well as some of the best-managed gardens. The garden must be very small indeed, where something may not be learned even by those most advanced in their practice. The greatest pleasure we have had in penning these random notes, is from the proof we have obtained, that the shortcomings and difficulties stated, have been especially appreciated. As a proof of our gratitude, we would wish to state, that all the letters sent with or without names, on the position and the rights of gardeners, and the simplest and best ways of doing work, shall not be forgotten when we get a little more of the bustle over. Just now when mind and body are exhausted before the day's work is over, there is but little time for discussion. We are, however, so sure of the statements made being correct, especially as to gardeners' rights, that we earnestly hope no brother gardener will act in opposition to them. As to the use of tools, if some can manage better with a rake than a hoe, let them use the bridge that carries them over the stream. One friend tells us he could never remove his large weeds without the rake. Our answer would be, Why let them be so large?

KITCHEN GARDEN.

Much as last week. Have planted little except Celery, and that we shaded. Will allow Cauliflower to remain a little longer. The chief work has been watering Peas, Cauliflowers, &c., and mulching them well with short grass and litter as soon as watered. Without the mulching watering did but little good. We have great faith in deep-stirred soil in securing good crops either in wet or dry weather, and more especially if in continued hot weather the surface be roughly mulched. Last season, though for nearly two months Cauliflowers had no water, they were very good indeed, but they were deeply, some 8 inches, mulched with litter, and even that was several times shaken up, so that air should have access to the roots whilst the hot rays of the sun were thrown back from the surface. Lettuces coming in for use were watered and deeply mulched—some were transplanted under shade, but, as stated last week, the best plan is to sow often thinly in rows, and let them stand where sown. They will not run so fast as those transplanted. Gathered a large dish of Broad Beans of the Long-pod kind on the 8th inst., and have had plenty since. This is the earliest period at which we have gathered them here out of doors. They, as well as many other things, will require mulching if this weather last. We have never pleased ourselves with the garden Bean under glass. At one time circumstances made us anxious to have it as early as Peas, but we did not succeed. We had flowers early enough, but they did not set, with the aid of abundance of air, and even of bees to help them. Have any of our readers done much in the way of forcing them? We have fallen back chiefly on the old plan of sowing in boxes and turves, and transplanting out of doors in March.

Run the Dutch hoe through the whole of the kitchen garden where there was room for the hoe to enter; surface-stirring, weed or no weed; and set a careful man to do the same among the Onions, as a careless worker would do more harm with his legs and hoe-handle than he would do good with surface-stirring and cutting up any weeds that might appear. We sowed our Beet this year in the garden and covered with a net, but even now the birds have beaten us, and the plantation will be patchy and need filling up. We shall henceforth make a virtue of necessity and sow in a little bed, and transplant when 3 or 4 inches in height, after which the birds let them alone. Just for trial we sowed also Prince's Feather and Love-lies-bleeding, and run threads over the rows; but we might as well have let the birds have them without let or hindrance. Two or three square feet under protection would give enough of plants for beds or borders. The birds have never interfered with a deep purple Spinach, but the above flowers and the Beet are seized upon as soon as they appear above ground. Is such a fancy among our feathered neighbours at all a common one?

Cucumber Disease.—We said a good deal on this subject last season. In a two-light box, which had borne heavily, a slight trace appeared last week, and as we had plenty more the plants were at once taken out, the frame cleared, fresh earth given, and fresh plants turned out. Wherever gum or spot makes its appearance, whatever palliatives may be resorted to, hardly anything will make a cure, and after much experience and inquiry we can say no more on the subject than was stated last season. The best preventives are fresh soil, suitable temperature, and plenty of pure air; and the best remedy is destroying the plants and planting fresh ones.

FRUIT GARDEN.

A busy time with keeping off interlopers from ripening fruit. Were obliged to run netting over the openings in our orchard-house to keep the larger birds from the tempting Cherries. The other morning we counted eighty black-birds and thrushes pecking wherever they could through the meshes of a net over a piece of early Strawberries. Where such numbers abound there is no security except netting, and doing it securely, and keeping the netting considerably above the foliage, otherwise they will sit on the netting and not become entangled in the least. It is when they get under the netting that they become entangled, when scared and they attempt to escape in a hurry. Had they the sense quietly to return to the hole by which they entered they would seldom injure themselves in the attempt to escape. A net merely spread over a place is their delight; they are sure, from the promptings of curiosity, to get below

it to see what there is there. Poor things! at present they must be anxious to find anything to moisten their throats in this parching weather, and did they keep within bounds we would freely let them have their share, but we do not like them having all the produce for which we have toiled.

Watered and mulched the *Strawberries* out of doors. If not covered immediately the watering was but of little use. Could we have spared time we would have set about layering *Strawberry* plants for forcing, and will soon be at them. Seldom have more contradictory accounts appeared than of forced *Strawberries* this season. With the exception of a few of the earliest ours have done well. Many failures, we have no doubt, have taken place from large luxuriant plants and unripened buds. In our description of *Latimers* we especially noted the fine-looking *Strawberry* plants, in large pots, but as they were not wanted early, and great care was taken to ripen the buds, we felt pretty sure that the crop would be better than usual. Hence the hint the other week, to which Mr. Donaldson has kindly replied, and says, "I have President, Admiral Dundas, and Sir Charles Napier, in full bearing, not thinned-out to five or six berries, but to fifteen, sixteen, and even twenty berries each plant. I had President ripe in the larger pots on the 20th of April," and he mentions some mutual friends and others who pronounced them very fine. He also states he had not a blind plant amongst five hundred plants. Those in small pots showed also well, but being placed on the shelves of theinery did not swell off so well. Mr. Donaldson adds, "I consider the great points are to get your runners early, so as to fill the pots well with roots, and then the crowns are sure to get hard with flower-buds." We would just add as a caution, that those who imitate Mr. Donaldson in using large pots must not satisfy themselves with the half of the plan, but must follow out the bud-ripening process. These splendid plants, when we saw them last season, were each elevated on the reversed bottom of another pot, and standing a good bit apart, so that sun and air might act on pot and roots, as well as foliage. This is a very different thing from placing the pots on the ground, and even in a shady place, and then expecting the plants to be bristling with flower-buds. The appearance of these plants in autumn, and the crops they produced this spring, is just another proof that we must think and plan and work for results.

Other departments much the same as last week, only we managed to finish mulching with rotten dung all the fruit trees in pots in the orchard-house. Scarcely any fire heat has been used for a fortnight, except on one or two cold nights.

ORNAMENTAL DEPARTMENT.

Much the same as last week. Owing to the great heat we have allowed a little of our bedding to remain over until there be a change, more especially as other work required doing more, and the plants are all right where they are. For many years we filled a verandah fronted with glass with vases of flowers, and they had a fine effect as a background to a sunk Italian garden. For various reasons, and much against our desire, the practice was discontinued, and now it is to be revived, and we have just been getting them filled. Some of these vases were large and heavy, and not easily moved when full, and some from 5 to 6 feet in height, pedestal and all together. It is not desirable that the floor should be wetted in watering. Previously we had stands made to go below the pedestals to catch the water; but then there was a trouble in moving the vases to get at them. Thanks to a hint from the bricklayer, who was repairing some of the vases with cement, we shall now be able to remove the water without any difficulty. For the larger vases we had pedestals made of deal, from 16 to 20 inches square, and from 4 to 6 inches deep. The top was covered with a board, and a hole cut out some 6 inches in diameter, to let the water trickle down. These we primed and then painted and sanded with yellowish sand, so as to resemble a dark stone. The improvement consists in cutting out on the level one of the sides for 10 inches in length, but so hinged that we can place a zinc vessel beneath it 9 inches square, and 2 inches deep, and take it out when it is nearly full, without touching the vase or pedestal. The arrangement is a very simple one, but it will be none the less useful, and the plants can be duly attended to with watering, without ever slopping and sailing the floor. Many other matters must wait until next week. R. T.

COVENT GARDEN MARKET.—JUNE 17.

The markets are heavily supplied, and very considerable quantities of soft fruit are coming in from various parts of the kingdom. Great complaints are made of the light crops of *Strawberries* round London. The trade for old *Potatoes* is exceedingly dull.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	2	0	to 4	0			
Auricles.....	0	0	0	0					
Cherries.....	1	0	2	0					
Cherrnuts.....	14	0	20	0					
Currants, Red... ½ sieve	0	0	0	0					
Black.....	0	0	0	0					
Figs.....	8	0	12	0					
Pilberts.....	0	0	0	0					
100 lbs.....	50	0	60	0					
Cobs.....	2	0	3	0					
Gooseberries... ½ sieve	5	0	10	0					
Grapes, Hamburghs lb.	8	0	12	0					
Muscats.....	8	0	10	0					
Lemons.....	100	5	0	10	0				
Melons.....	each	4	0	to 8	0				
Mulberries.... punnet	0	0	0	0					
Nectarines.....	doz.	12	0	to 24	0				
Oranges.....	100	4	0	to 14	0				
Peaches.....	doz.	16	0	to 36	0				
Pears (kitchen).....	doz.	8	0	to 0	0				
Pears (dessert).....	doz.	0	0	to 0	0				
Pine Apples.....	lb.	6	0	to 10	0				
Plums..... ½ sieve	0	0	0	0					
Quinces..... ½ sieve	0	0	0	0					
Raspberries.....	lb.	1	0	to 1	0				
Strawberries.....	lb.	0	6	to 3	0				
Walnuts.....	bush.	14	0	to 20	0				

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	each	0	4	to 0	6				
Asparagus.....	bundle	3	0	5	0				
Beans Broad..... ½ sieve	2	6	4	0					
Kidney..... 100	1	0	1	6					
Beet, Red.....	doz.	3	0	4	0				
Broccoli.....	bundle	0	0	0	0				
Brussels Sprouts ½ sieve	0	0	0	0					
Cabbage.....	doz.	1	0	2	0				
Capitulum.....	100	0	0	0	0				
Carrots.....	bunch	0	7	0	10				
Cauliflower.....	doz.	4	0	8	0				
Celery.....	bundle	2	0	3	0				
Cucumbers.....	each	0	6	1	8				
pickling.....	doz.	0	0	0	0				
Endive.....	score	2	6	3	0				
Fennel.....	bunch	0	3	0	0				
Garlic and Shallots, lb.	0	8	0	0					
Herbs.....	bunch	0	3	0	0				
Horseradish... bundle	2	6	4	0					
Leeks.....	bunch	0	2	to 0	6				
Lettuce.....	per score	0	9	1	6				
Mushrooms.....	pottle	1	0	2	6				
Mustd. & Cream, punnet	2	0	0	0					
Onions.....	bushel	5	0	7	0				
pickling.....	quart	0	4	0	8				
Parsley..... ½ sieve	1	0	1	6					
Parsnips.....	doz.	1	0	2	0				
Peas.....	quar.	0	9	1	6				
Potatoes.....	bush.	2	6	1	0				
New.....	per doz. lbs.	2	0	4	0				
Relishes doz. bunch...	0	6	1	0					
Rhubarb.....	bundle	0	2	0	4				
Savoy.....	doz.	0	0	0	0				
Sea-kale.....	bush.	0	0	0	0				
Spinach.....	bush-1	1	0	2	0				
Tomatoes.....	doz.	3	0	4	0				
Turnips.....	bunch	0	4	0	8				
Vegetable Marrows doz.	1	0	2	6					

TRADE CATALOGUE RECEIVED.

John Foulds, Hullard Hall Lane, Stretford New Road, Manchester.—*Catalogue of Chrysanthemums, Zonal Geraniums, Fuchsias, Verbenas, &c.*

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

SENDING GERANIUM CUTTINGS TO A DISTANCE (J. S.).—We put them into a box in alternate layers with damped moss or damped cocoanut refuse, and they should be taken out and planted during the evening of the day they are received.

ROSE LEAVES BLOTCHED (G. C. A.).—Mulch the surface of the soil above the roots of the trees. Water liberally every evening during dry weather. Give liquid manure once a week from your cess-pool, but to each bushful add two buckets of water.

BOOK (Plato).—The "Cottage Gardener's Dictionary" contains all that you mention down to the date when it was revised by Mr. Johnson.

ORNITHOGALUM THYRSOIDES AFTER BLOOMING (Hentley).—If kept under glass gradually withhold water, and keep the soil just moist, but rather inclined to be dry than otherwise until October; then repot, shaking or taking away most of the old soil, and using a compost of sand, loam two-thirds, and the remainder leaf mould and peat in equal parts, with a free admixture of silver sand. We grow the plant in a cold pit, and remove it to the greenhouse for bloom, and when this is over plunge the pot in a sunny part of the garden, and take no further trouble about the plant until it is taken up and potted in October: we then place it in a cold pit. It is hardy with us in a sheltered border, and probably so in border generally, but we have not sufficient stock to warrant our trying it in this way.

SOAP-BUDS (H. G. Anderson).—So far from injuring they improve the house-sewage for all garden crops. As they consist chiefly of water you need not add so much clear water to the sewage before using it, as is necessary when composed of contributions only from the chambers and water-closets.

MANAGING HARE'S-FOOT FERN (*R. F. R.*).—The Hare's-foot Fern is *Devailla canariensis*. It does very well in a shady part of the greenhouse, and will do fairly in a fern-case if not kept too moist. Plant it in the driest part of your fern-case, or shift it into a larger pot, and so that the thick roots or rhizomes may rest on the soil. Drain well, and use a compost of turfy peat two-thirds and loam one-third, with a free admixture of silver sand. Water freely when growing, and keep the soil moist after the fronds become mature. It usually loses its fronds when the fresh ones begin to appear, or shortly before, and we think your plant was only doing this preparatory to commencing to grow. If you have a greenhouse or a vinery, that would be the best place for it.

PEACH TREES GUMMING (*F. H. Lane*).—Gumming in fruit trees is to be attributed to the sap not being sufficiently elaborated in the leaves, through an excess of food being absorbed by the roots. It is very common to the Peach and Apricot on the Plum stock on dry gravelly soils. Yours is a very bad case. We think the roots are deep in a bad soil, and know of no remedy except taking up the trees and replanting them early next autumn. We had some equally bad, and we took them up, though very old, and with the loss of many branches from gummy exudation, and found the roots had penetrated into the gravel to a depth of 3 feet, and were only bare sticks. The trees were replanted in turfy soil from sods 6 inches thick chopped fine, slates were placed over the bottom of the border at the depth of 20 inches to prevent the roots going down, and the latter were covered with only 6 inches of soil. The trees are now free from gum, and have set too many fruit by ten times. The Apricots are also free from gum, and not making so much wood; and the Peaches, little better than skeletons before lifting, are fast filling with short close-jointed wood. Gum being a disease of the sap, though not communicated from one individual to another, soon spreads to all parts of a tree, just as a disease of the blood in animals spreads over the whole body.

GARDENING APPAREL (*An Amateur Gardener*).—You should wear a substantial pair of boots, and any old habiliments you have whilst you are at work in your garden; but if you wish to be spruce buy a tourist's grey suit.

CALCEOLARIA SEEDLING (*Loch Ness*).—The flowers are good in form and colour, but not unlike many other seedlings which are raised every year. The Rose leaves are extremely fine specimens of healthy and vigorous growth.

ABUNDANCE OF GRAPES (*W. B. d'Almeida*).—The Black Hamburgh under ordinary circumstances would yield you the largest and most unfailing supply. Your other query is answered in "Our Letter Box."

LILIUM GIGANTEUM AFTER BLOOMING (*P. Q.*).—Unless you wish for seeds we would, when the flower-stem turns yellow, cut it off just below the seed-pods. Continue watering as usual for at least three months longer. In September remove to a cold frame in the full sun, and give but little water after this with abundance of air. Protection from frost is all that is required in winter. It may bloom another year if liberal treatment be given when growing, and the bulbs be well ripened off in autumn. Abundant moisture with free drainage when growing, plenty of pot room, and well ripening the bulbs in autumn are the essentials to success. Pot in spring.

TAKING UP CROCUSES—REMOVING POLYANTHUSES (*J.*).—Crocuses are best left in the ground all the year, and only need taking up every three years or so to divide the roots, planting again the same day. They bloom better when not taken up. The Polyanthuses should now have a rather shady and cool border, one shaded from the midday sun, and if they have this with a moist soil they need not be removed, unless the roots are large, when it may be desirable to divide them. Plant on an east border, or where they can have the morning and evening sun with protection from the burning heat of the sun from 10 A.M. to 4 P.M. A little fresh mould placed around the crowns will be of service in preserving the roots from drought, and during very dry weather the plants should be sprinkled with water in the evening—that is, if you do not move them. A little sand placed between the plants up to the crowns is very good at this season. Keep cool and moist.

EXPULSION OF EARTH WORMS (*Idem*).—Mix 14 lbs. of fresh lime with forty gallons of water, stir well up, and allow the mixture to stand for forty-eight hours. Water with the clear water during showery weather when the worms are near the surface; they will then come to the surface, and may be cleared away. This repeated a few times will clear the ground. Not sprinkled on the surface is not killed either by worms or slugs, and is, besides, a good manure.

PLANTING OUT LILIUM GIGANTEUM (*H. W. E.*).—We should not advise you to plant out your *Lilium giganteum* unless yours is a very sheltered place. The soil should be well drained if it is planted out. If you have a spare plant and wish to plant it out, you had better do so at once. Let the bulb be placed about 2 or 3 inches below the surface of the ground. We prefer growing them in the greenhouse, and as soon as they have done flowering put them out in the open air to ripen gradually. They will not require much water, and during their season of rest they are best kept in a cool greenhouse during the winter. We believe that no portion of the patent you mention is sustainable, but we cannot advise on such a subject.

PRIMUM TEXAS SEEDS NOT VEGETATING (*Lar*).—Your seeds seem all right, but we cannot say whether they will germinate or not. They are sound for the most part, though many are defective, and some abortive. The seeds ought to have germinated in one or all of the ways in which they were sown by you. We have sown the seeds repeatedly, and had no trouble in making them germinate. We drain a pot well, and fill to within half an inch of the rim with rather strong loam, and sow the seeds just covering them with fine soil. The soil is kept constantly moist, and the pot placed in a mild hotbed until the seedlings come up, when they are removed to a cold frame or greenhouse, standing the pot on a cool bottom, or failing that, it is placed on an inverted saucer in the midst of a larger one filled with water, so that the bottom of the pot just touches the water. The young plants are potted off when of sufficient size, and grown on in a cold frame, protected in winter by mats. We should say your seeds are too old to germinate, or they may not have been sufficiently ripened. We have had them from New Zealand, and found steeping them in water at 100° induced germination when they otherwise failed. They were steeped about twelve hours, and sown immediately afterwards, or not allowed to become dry before sowing.

GERANIUM IN RICH SOIL (*F. C.*).—We think you have added by far too much manure; so much, in fact, that the plants not only refuse to root into it, but those already existing are destroyed. As the leaves flag, and copious waterings only aggravate the evil, your best plan would be to take up the plants, remove the soil, and replant in loam from rotted turves if you have it—if not, in good rather light loam. The rich soil will do very well for top-dressing the beds of *Calceolarias*, *Roses*, &c. Turfy loam with a little leaf mould is most suitable for *Geraniums*. In rich soil they go too much to growth, whilst in that which is very rich they will not grow at all, or only for a brief period, and then go off just when they ought to be growing freely. One-fourth of well-rotted manure is as much as can be given along with loam to *Geraniums* with advantage. More may give vigour, but at the expense of the bloom.

GNAPHALIUM LANATUM (*P. P.*).—*Gnaphalium lanatum* is a very useful plant for edging large beds with, but it is rather too coarse for small beds. It is perfectly hardy. The spring is the best time to divide or propagate it.

CHERRIES FALLING (*Dublin*).—The very heavy crop borne by the trees last year, and the very hot dry weather now prevailing, evidently weakened them. The gangrene or brown ulcers on each Cherry intimate that there is a deficient supply of sap. We should manure the soil for some feet in a circle round each tree, mulch the surface, and water plentifully.

INARCHING MUSCAT OF ALEXANDRIA ON WHITE TOKAY (*D. W. C. N.*).—You should have allowed both rods to grow on till the pruning season had arrived. All that was necessary to be done was to pinch in all the laterals on the stock, so as to throw all the strength you could into the graft. You might have taken a good crop off the old rod without doing the growing cane any injury. We should not advise you to depend on the Tokay as a stock for all your Muscats. We prefer the following kinds for stocks for the Muscats—namely, Black Hamburgh, Trebbiano, and Lady Downe's. The reason why the leaves are turning yellow is this, the union was not so complete as you expect, and, from cutting the old rod away, the stock has thrown up more sap than the young cane could absorb, and no doubt a large portion has been lost. If the union was not complete the sap would flow to the point where the old rod was cut off, instead of flowing into the young cane.

INSECTS (*F. G. C.*).—Neither of the insects described above is a wire-worm. The first is evidently Snake Millipedes (*Julus pulehius* or allied species). We cannot determine the longer one without seeing a specimen, but it is probably the Gordian Worm (*Gordius aquatilis*). We know no better remedy than that of placing slices of vegetables in the places they frequent, as they are especially fond of vegetable matter in an insipid state of decay. (*E. Harvey*).

VARIOUS (*E. A. P.*).—You may remove the tips of the Gooseberry shoots, and thus remove the aphides without injuring the berries. The treatment of *Azalea* after flowering is stated at page 453 of our last Number. The Nite Liv, which we presume is *Nymphæa Lotus*, must be allowed to complete its growth where it is.

NAMES OF PLANTS (*Hessine*).—1, *Platyloma flexuosum*; 2 and 3, missing; 4, *Blechnum spicatum*; 5, *Onychium lucidum*; 6 and 7, insufficient; 8, *Chelanthus hirta*; 9, *Cytomium falcatum*; 10, *Adiantum formosum*. *Lotus* must send a specimen in flower. (*J. S.*)—*Virullia lutea*. (*A. Donagel Subscriber*).—*Tecoma jasminoides*. (*B. N.*)—*Erythronium ochroleucum*. We cannot determine the *Calystegia* from the specimen sent. (*G. Gravel*).—*Tamarix gallica*. (*T. S.*)—1, *Cherophyllum tremulum*; 2, *Hunium flexuosum*; 3, *Gallium saxatile*; 4, *Cerastium vulgatum*; 5, *Campanula glomerata*. (*A. Young Gardener*).—3, *Polemonium coeruleum*; 4, *Aubrieta deltoidea*; 5, *Spiraea filipendula*. (*E. D. S.*)—Red flower *Valeriana rubra*, and the other *Cotyledon umbilicus*. The last-named is popularly known as Wall Penny-wort.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending June 17th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep	2 ft. deep.			
Sun. 11	30.324	30.142	70	30	61	61½	N.E.	.00	Dry N.E. wind; fine; very fine; below freezing at night.
Mon. 12	30.409	30.395	68	35	63	61	N.E.	.00	Cold, with dry easterly wind; overcast and cool at night.
Tues. 13	30.381	30.352	81	40	62	61½	N.W.	.00	Fine; very fine; hot and dry; fine.
Wed. 14	30.415	30.346	80	36	63	61½	E.	.00	Very fine throughout; rather cold at night.
Thurs. 15	30.373	30.312	78	46	62½	61	N.E.	.00	Very fine throughout.
Friday 16	30.379	30.359	80	48	63	61½	N.E.	.00	Very fine; low white clouds; hot sun; fine at night.
Sat. 17	30.366	30.225	74	38	63	61½	N.E.	.00	Overcast; fine; low white clouds in clear blue sky; cold at night.
Mean	30.364	30.308	75.57	38.00	62.93	61.35	.....	0.00	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

A METROPOLITAN POULTRY SHOW.

We are rapidly reaching the longest day and as yet we hear no tidings of a poultry show at or near London. Surely the year, and especially this season of it, will not be allowed to slip away without a meeting of the "cock parliament!" What are managers and secretaries about? Will not Mr. Houghton or Mr. Douglas give exhibitors a chance? Why should not the Crystal Palace Show come to life again? Oh! those jolly hours at Sydenham, dear to memory! Do we not recall the pleasant drive through sunny lanes and over breezy uplands, or the not-so-agreeable trips from town, when

"Rattle his bones
Over the stones,
It's only a 'cabhorse' which nobody owns!"

rings in the ears of the occupant of the Hansom cab? We remember, too, the palpitating "heart-in-your-mouth" sensation felt as one seeks the well-known quarters of the poultry, and amid discordant crowings of giant Cochins and pigmy Bantams, espies the much-loved familiar pen, and finds it honoured with a coloured card! And then the fun of hearing the comments on your own birds, not always complimentary; and then the cozy luncheon and the best of lobster salads, and the sparkling "cliquet" with which the winner of a "first prize" regales the ladies, and the comfortable spin home in the dogcart, and the mild quiet weed, and last, not least, the delight of your poultry factotum when he learns that "they Brahmas," as he terms them "have won!" Let us hope that the Sydenham authorities will renew such pleasures as these, or, in default thereof, that other scenes may welcome the poultry; that the Agricultural Hall, which seems to rival the Ark in the variety of the animals to which it opens its portals, may again ring with the clarion of the cock; or that Alexandra Park, whose abortive effort last year we all commiserated, may give a chance of "running a tilt" against other exhibitors to—
BRAHMA POOTRA.

NORTH HANTS POULTRY SHOW.—JUNE 1.

FOLLOWING the good example of the Bath and West of England Show, the North Hants Society has determined on moving about, and accordingly this year the Show was held at Winchester. We should like another change, to find it extended to other parts of south-western districts—Dorsetshire, Wiltshire might claim a share of the patronage. The different towns might compete in liberality for the presence of the exhibition to the advantage of all concerned. This would make it necessary to prolong the time of showing, and that which is now the affair of a few hours might extend over two or three days. Perhaps, like the creation of Frankenstein, it might assume proportions that would astonish its managers. We should be glad to see it. Dorchester formerly had good shows; Southampton stood well; Salisbury was "to the fore," and now all are in a state of collapse. There is no doubt the south-west could support a large show, and this meeting showed a step in that direction. The stone is rolling. The ground was admirably chosen, close to the town. The inducement of music and an enclosed spot for a promenade, mown and rolled till it was even as a carpet, offered attractions to those (if there be such), who came neither for poultry, sheep, cattle, horses, implements, nor flowers.

The *Dorkings* were most excellent. They would have been a credit to any show in England, for shape, weight, and colour. The first-prize birds were most meritorious; Mr. Fowler's second-prize birds were very good. Several very fine birds in other respects had their spurs growing on the outside of their legs. The *Cochins* gave deserved laurels to Miss J. Milward and Mr. Fowler. The *Game* exhibitors understood their business in matching their birds well. Mr. Bertram's cock and hen were beautiful, and Mr. Dupe's *Duckwings* were deservedly admired. *Polands* are popular in Hants but it is hard to beat Mrs. Pettatt and Mr. T. P.

Edwards. The *Spanish* were better than we have ever before seen at this Show, and Mr. Simmond's birds, if shown in good condition, will repeat their exploit. We have not of late seen a better pen of Golden-pencilled *Hamburghs* than those shown by Mr. Pettis, while the quality of the *Spangled* may be judged from the fact, that Mrs. Pettatt took only second prize. *Brahmas* are decidedly becoming popular, and here as elsewhere, there were two classes, one for light, and one for dark. Mr. Pares took both in the first. In the second, great names met. Mr. Boyle, of Dublin, was first; Mr. Fowler second; and Mr. Hinton was highly commended. The *Various* class deserves more than two prizes. *Andalusians*, *Malays*, *Crève Cœur*s, *Black Hamburghs*, *Phoenix* *Malays*, and *Bantams* form a large class. Mrs. Pettatt was first with *Sebright Bantams*; Mr. Hinton, second, with *Malays*. Many of the commended deserved more.

Mr. Fowler made a clean sweep of the *Duck* prizes. His prize birds were 7½ lbs. each.

There was a small show of *Rabbits*. The longest ears measured 20½ inches. In the foreign class the prize went to a large Rabbit accurately marked like a *Himalayan* and covered with long silky hair. That for all points went to a remarkably handsome one weighing 9½ lbs., and measuring 19 inches.

This Show becomes every year more successful, owing partly, no doubt, to the excellent management and constant attention of Mr. Downes, the Secretary.

In addition to the prizes awarded, which will be found in our Number for June 6th, the following commendations were given:—

DORKING.—Highly Commended, G. Johnson, Fareham, Sarrey; C. Smith, Durnford, Salisbury; Mrs. Pettatt, Ash, Micheldever; T. F. Edwards, Lyndhurst.

GAME.—Highly Commended, O. Nicholson, Fareham.

POLAND.—Commended, Mrs. Pettatt, Ash, Micheldever.

SPANISH.—Commended, W. Newman, Walsal; Rev. J. De L. Simmonds, Chilcomb Rectory, Winchester.

BRAHMA POOTRA.—Highly Commended, J. Hinton, Bath.

ANY OTHER VARIETY.—Highly Commended, J. Pares, Childown Hall; Chertsey; Rev. S. Terry, Dummer; Mrs. Pettatt, Ash, Micheldever. Commended, Mrs. Bennett, Chilmark, Salisbury.

DUCKS.—Highly Commended, J. W. Kellaway, Meriton; E. Curtis, Dummer. Commended, Mrs. Sillescu, New Barn, Compton.

RABBITS.—*Variety* (to include all points).—Highly Commended, J. H. Robinson, Winchester.

Mr. Baily was the Judge.

THORNE POULTRY EXHIBITION.

(From a Correspondent.)

THIS Society has now been established thirteen years in connection with an agricultural show. Each year, we are happy to say, its success has proved regularly progressive, but certainly the advance this year has been more apparent than ever.

The Show took place on the 14th inst., in the beautiful grounds of Makin Durham, Esq.

Of the *Spanish*, with the exception of the winning birds, we can say but little, as the condition in which the generality of the birds in this class were shown was inferior. *Cochins*, shown by Messrs. Wood and Beldon, were very good, and we also noticed a nice pen of *Silver Cinnamon*s. *Dorkings* were poor. *Game*, *White* and *Piles*, the prize birds were good, also the pens of *Black Reds* shown by Messrs. Brierley and Snowden; the *Duckwing* class was a very poor one. The prize for a *Game* cock and one hen was closely competed for by Messrs. Chaloner and Aykroyd. Both pens were really good, and the former took the silver cup, value £5. The *Single Game* cock class contained many good birds. Mr. E. Aykroyd won the cup with a splendid *Brown Red*. The show of *Hamburghs* was good, the birds of Messrs. Beldon, Burch, and Butler were far ahead of the rest. The next class of note must receive the greater praise. The class for *Game Bantams* was, without exception, one of the best in the Show, and the birds of Messrs. Croeland and Brierley were splendid and shown in prime condition. The Judges awarded the silver cup to the former pen on account of their smallness; and we were given to understand, that the second and third prize pens had won similar events for the present cup winner. In *Bantams*, *Gold* and *Silver-laced*, and *Black* and *White*s, the prize pens were very nice.

There was a very good show of *Pigeons*, and we are glad

to inform exhibitors that the Judges' awards gave general satisfaction.

SPANISH.—First and Highly Commended, H. Beldon, Bingley. Second, E. Brown, Sheffield.

COCHIN-CHINA.—First, R. J. Wood, Chorley. Second, H. Beldon, Bingley. **DORKING.**—First, W. Charter, Sheffield. Second, Hon. F. C. H. Hawke, Womersley Park. Commended, J. Siedmore, Epworth.

GAME (White and Pile).—First, J. Sunderland, Coley Hall. Second, R. Dodge, Sheffield. Commended, J. Hodgkinson, Hull.

GAME (Black-breasted and other Reds).—First, C. W. Brierley, Middleton. Second, H. Snowden, Great Horton. Commended, J. Sunderland.

GAME (Duckwing and other Greys and Blues).—First, H. Snowden, Great Horton. Second, E. Aykroyd, Bradford. Highly Commended, Messrs. Sales and Bentley, Crowle. Commended, G. Cocking, jun., Crowle.

GAME (Any variety).—First and Cup, C. Chaloner, Steeley. Second, E. Aykroyd, Bradford. Third, J. Sunderland, Coley Hall. Highly Commended, H. M. Julian, Hull; W. Boyes, Beverley. Commended, J. Fletcher, Manchester.

GAME COCK (Any variety).—First and Cup, E. Aykroyd, Bradford. Second, J. Sunderland, Coley Hall. Highly Commended, W. Boyes, Beverley (Red); J. Fletcher. Commended, H. M. Julian, Hull (Red); C. Chaloner, Steeley; G. Hellwell, Walkley.

POLAND (Any variety).—First, C. W. Brierley, Middleton. Second, H. Beldon, Bingley.

HAMBUROS (Silver-spangled).—First and Second, H. Beldon, Bingley. Highly Commended, A. K. Wood, Burnside, Kendal.

HAMBUROS (Golden-spangled).—First and Second, Messrs. Birch and Boulter, Sheffield. Commended, H. Beldon, Bingley.

HAMBUROS (Silver-pencilled).—First, H. Beldon, Bingley. Second, G. Hellwell, Walkley. Highly Commended, J. Hepworth, Bearwood Green. **HAMBUROS (Golden-pencilled).**—First and Second, Messrs. Froggatt and Harrop, Walkley. Highly Commended, W. Charter, Sheffield.

ANY FARMYARD CROSS.—First, H. Beldon, Bingley. Second, C. W. Brierley, Middleton.

GAME BANTAMS (Any variety).—First, Master C. Crossland, Wakefield. Second and Third, C. W. Brierley, Middleton.

BANTAMS (Silver or Golden-laced).—First, C. W. Brierley, Middleton. Second, Messrs. S. & R. Ashton, Roe Cross. Highly Commended, H. Beldon, Bingley.

BANTAMS (Any colour).—First, C. W. Brierley, Middleton (White). Second, J. R. Jessop, Hull (White).

BEST COCK (Any Breed or Cross).—First, H. Beldon, Bingley. Second and Highly Commended, Messrs. Birch & Boulter, Sheffield (Spanish). Commended, H. Merkin, Driffield (Cochin). **Hens.**—First, Messrs. Birch and Boulter (Spanish). Second, H. Beldon. Commended, S. Taylor, Cantley; R. White, Sheffield (Cochin).

BEST COCKEREL AND TWO PULLETS (Any pure breed).—First, G. Hellwell, Walkley. Second, H. Snowden, Great Horton.

EXTRA STOCK.—Prize, J. Hawley, Doncaster (Crève Cœur).

GUINIA FOWLS.—First, Hon. F. C. H. Hawke, Womersley Park. Second, H. Merkin, Driffield.

TURKEYS.—First, C. W. Brierley, Middleton. Second, Miss Smith, Hatfield.

GESE.—First, O. A. Young, Driffield. Second, Mrs. Lea, Thorne.

GISS.—First, Hon. F. C. H. Hawke. Second and Commended, Mrs. Langhorn, Arny.

DUCKS (Any variety).—First, H. Beldon, Bingley (Rouen). Second, J. R. Jessop, Hull.

Pigeons.—Carriers.—First, W. Massey, York. Second, H. Yardley, Birmingham. Highly Commended, E. E. M. Royds, Ashby-de-la-Zouch. Commended, H. Snowden, Great Horton; E. Brown, Sheffield. **Croppers.**—First, E. Brown. Second, H. Snowden. Highly Commended, H. Yardley. Commended, E. E. M. Royds. **Tumblers.**—First, E. Brown. Second, W. Massey. Highly Commended, Messrs. R. & C. Gravill, Thorne. Commended, H. Yardley. **Jacobins.**—First, H. Yardley. Second, R. Favell, Sheffield. Highly Commended, T. C. Taylor, Middlesborough. **Nuns.**—First, C. Addey, Epworth. Second, J. Pickering, Driffield. **Trumpeters.**—First, A. Middleton, Newport. Second, E. E. M. Royds. **Turbits.**—First, E. Brown. Second, H. Yardley. **Fantails.**—First, T. C. Taylor. Second, H. Yardley. **Oels.**—First, H. Yardley. Second, E. E. M. Royds. **Barbs.**—First, E. Brown. Second, H. Yardley. **Extra Stock.**—Prize, C. Addey.

JUDGES.—William Smith, Esq., Beech Hill, Halifax, and Thos. Dodds, Esq., Warren Cottage, Wakefield.

FRANCIS RICHARD PRASE, Esq., of Southend, Darlington, died on the 7th inst. at the early age of twenty. As a poultry fancier and exhibitor nothing can so clearly bear testimony to his practical earnestness and soundness of judgment in this fancy as his numerous triumphs at so many of our poultry shows, where his fine birds must in the future be missed. But Darlington will especially suffer from his absence, as this Show owed to his quiet unobtrusive, yet masterly and liberal efforts to make it deserving the district, more than is generally known. His labours in this at so early an age and with so weak a state of health were great promises, had life been spared him, of an amount of public usefulness, the loss of which must be generally regretted.—W. W.

CROOK'S INCUBATOR.—On the evening of the 9th inst., Messrs. Crook, of Carnaby Street, exhibited their artificial incubator and artificial rearing apparatus, at the Royal Institution, Albemarle Street. It was arranged so as to show it in action with their new gas lamp, and the chicks coming

out; others under the artificial mother; and some feeding in portable runs. The sound of the young ones chipping inside the eggs was a novelty to many of the audience.

BEE-KEEPING IN DEVON.—No. XXIII.

A COUPLE OF MISTAKES AND THEIR CONSEQUENCES.

YESTERDAY (June 14th) I took a trip a few miles into the country with the view of inspecting the apiary of a clerical friend, who within the last few years has become rather an enthusiastic bee-keeper, and who, having advanced so far as to adopt Woodbury hives, had recently attempted to follow the instructions given in page 407 of "Our Journal" (of which, I need scarcely add, he is a constant reader) by forming a small artificial swarm or "nucleus."

I learned that he commenced proceedings on the 27th of last month by taking a brood-comb from a strong stock, and placing it in a nucleus-box between a couple of spare combs, and with a small population abstracted from the parent hive. Having scrutinised the brood-comb most rigidly he said to himself, "It's all very well for Mr. Woodbury to talk about seeing the queen on another comb, but I'm quite sure she's not on this one, and, besides, I really fancy I did catch a glimpse of her on another." So the nucleus was put in its place and left for four days, when it was examined with the view of ascertaining how many royal cells had been started. Somewhat to my friend's surprise he found that not even one had been commenced. Rather puzzling, this! but never mind, we'll give them another brood-comb, and then all will doubtless go well. Another comb was accordingly abstracted from the unfortunate parent stock, and the nucleus left quiet for a few days longer, when, an apiarian friend happening to call, the box was again overhauled, and, instead of the expected royal cells, there was the old queen composedly traversing the first comb that was lifted out. What was now to be done? A council of war was hastily held, and it was ultimately decided to let things remain as they were—the old queen in the nucleus-box, and the bees in the parent hive raising royal cells to supply her place. Subsequently another nucleus was formed by extracting a comb with a royal cell and some bees from the old stock.

The parent hive and two small artificial swarms were submitted to my inspection, and I took them in the following order:—First the nucleus (now transferred to a full-sized hive) containing the old queen. Here I found brood had been added too fast, so that in every comb much had become chilled, and appeared in various stages of decomposition, interspersed with healthy brood, but remaining, as yet, unremoved by the bees. At my especial request my friend kindly consented to permit matters to continue in the same state, with the view of ascertaining whether the bees as they increased in strength would be able to remedy the evil, or whether there was any foundation for Mr. Lowe's opinion that under such circumstances foul brood must follow as a necessary consequence.

Next came the parent hive, now supposed, and no doubt correctly, to possess a young queen; but here the bees turned out so vicious that I had to put on gloves (a most unusual circumstance), and we were glad to be content with a partial examination. The two first full-sized combs were solid masses of sealed honey, so we made prize of the first and substituted an empty one. On the third comb we found the remains of two royal cells—one opened naturally, and from which a young princess had evidently emerged, the other torn open at the side, and marking the untimely destruction of its hapless inmate by her elder sister. This discovery leaving, as it did, no reasonable doubt of the existence of a young queen, sufficiently contented us, and we replaced the crown-board, glad to have done with such a cantankerous lot, whose vindictive and persevering attacks contrasted most unfavourably with the demeanour of my own mild and placable Ligurians.

In the second nucleus appeared a naturally-opened royal cell, and we presently espied its late tenant briskly traversing the same comb, and evidently in a high state of activity and health.

Having finished our examination my friend declared himself exceedingly well pleased with the result. His mistake had cost him, he said, a good super of honey, which he would

doubtless have obtained from the old stock had it continued in possession of its original queen; but, on the other hand, he considered he had gained far more than its value from the experience it had afforded him; actual experience being, as he justly remarked, of far more practical value than anything that could be learnt from books.

Passing the other colonies, some swarms, some old stocks, and some working handsome supers, but all in a most flourishing condition, my friend paused before a flat-topped straw-hive. "Here," said he, "I fear I have made another mistake," and proceeded to explain that a swarm having settled in two clusters he had hived them in different hives, which were left on the ground side by side until the evening, when finding that both hives continued tenanted, he concluded that each possessed a queen, and placed them on their respective stands, but now feared that the one before which we stood was in reality queenless. On turning it up I saw a small cluster of bees and three or four new pieces of comb, but immediately and confidently pronounced my friend's suspicions to be correct, for of these new constructions all were drone-combs. "What is to be done with them?" was the next question. "Give them to me," was my reply, "and if I am lucky in queen-rearing you shall have them back again with a Ligurian queen at their head." And so I took my place in the railway carriage on my way home, putting the hive of queenless bees under the opposite seat, which was forthwith occupied by a clerical gentleman, who on finding the kind of company he was in, smilingly requested to be informed if the railway bye-laws did not prohibit the conveyance of lucifer matches, bees, gunpowder, and other explosive combustibles? declaring that for his part he would rather be seated on a cask of gunpowder, since it was scarcely possible that that would explode, whilst he deemed it highly probable that the bees might escape! Our safe arrival at the Exeter station, however, speedily relieved him of his jocularly-expressed fears, and of the company of the bees as well as that of—A DEVONSHIRE BEE-KEEPER.

PUTTING TWO SWARMS INTO A STEWARTON HIVE.

WILL you kindly inform me whether if I put a swarm of bees in the lower box of a Stewarton hive and a second in the box immediately above it, the two could be made to unite and so form an extra strong stock?—G. H. H.

[If the two swarms issue within a few days of each other and are united immediately, we do not think there would be much risk of a quarrel.]

SWARMING VERSUS STORIFYING.

In my communication under the signature of "AMATEUR," at page 277, detailing my success with the storifying as compared with the swarming system, I promised to record my further progress.

Acting on my resolution, I procured from the country a couple of stocks of bees in common straw skeps to people the boxes of my two new octagon covers, and after these had remained sufficiently long to become familiarised with their new locality, I had them driven on May 9th, and their combs transferred to the frames of my new Stewarton boxes. This last operation was accomplished in a most expert and satisfactory manner in the genial warmth of the greenhouse, thanks to the considerate kindness of my friend, "A RENFREWSHIRE BEE-KEEPER," in again sending his man to aid me in the work.

After the two new octagon frame boxes had been completed, we had as much brood comb left over as filled the frames of a third octagon-box, with which I resolved to nadir my old strong colony. On attempting to raise the pile of three boxes out of the cover, the weight was so great that I first lightened it of the topmost breeding-box, and was taken by surprise to find its every cell filled with fine honey, as it doubtless had been left at the end of the season. It weighed 30 lbs. gross; deducting 4 lbs for the box leaves 26 lbs. nett; this added to the 68 lbs. formerly reported at page 278, gives a total honey harvest of 94 lbs. from the one hive. Last season, the remaining two boxes were still so

by the removal of end combs, &c.; but the season I considered not sufficiently advanced, and resolved to content myself meantime with what I had taken.

Such a yield of honey from one stock, in a town locality, too, impresses me most favourably with the storifying system, and the skilled manipulation of Stewarton hives in effecting results I could hardly have supposed possible from my experience of the old swarming plan.—R. B.

BEEES IN AUSTRALIA.

We copy the following from *The Australasian* of March 4th:—Woodbury frame-hives were first introduced into the colony with the Ligurians, and appear to have been fully appreciated, whilst we have reason to know that the "Victoria Apian Society" numbers among its members many accomplished bee-keepers. The innocence of the Melbourne editor's reply is, however, perfectly refreshing; he is evidently in a state of the most blissful ignorance alike on the subject of drone-breeding queens, fertile workers, or parthenogenesis in the honey-bee:—"I took a notion of keeping bees, and commenced six weeks since by placing a swarm in one of Woodbury's frame-hives. I thought I had a splendid hive, but on closer examination I found the brood were all drones!"

"As I understand the drones never collect any honey, and are only useful for breeding and keeping the brood warm, I am inclined to think that my hive will become extinct. I would feel very much obliged if you would advise me how to cure them.—J. G."

[Your communication is very remarkable. How did you come to buy a hive of all drones? It is the oddest transaction in the apian line that we ever heard of. As to curing a hive of being drones, *alias* males, you might as well attempt to cure men of being men, or women of being women.—Editor of "The Australasian"]

OUR LETTER BOX.

GESE AT THE BRENTWOOD SHOW.—Mr. Postans of Brentwood, Essex, informs us that the Geese which took first prize on the 6th inst. belonged to Mr. Postans of Sheller, in Suffolk.

MANAGEMENT OF BROODY HENS.—HENS PECKING THEIR EGGS (G. H.).—We can see nothing wrong in your management. It has not been a good hatching year because we, like yourselves, have had clear skies. We had on one day three out of four. Such a thing has never happened before. All our hens sit on the ground, but they are all confined, and in semi-darkness. We would kill any hen that ate the eggs she sat upon. We can only suggest one thing, and that is, that the hens should have dust at hand when they come off to feed. It is the sovereign remedy against vermin, and under the influence of the irritation caused by these parasites hens can not only not sit well, but they will do all sorts of strange things.

EARLOBES OF LA FLÛCHE COCK (E. P. L.).—The earlobes should be quite white. It would be a disadvantage in exhibiting, and in close competition would certainly turn the scale against him.

FOOD FOR YOUNG PARTRIDGES (W. B. d'Almeida).—Young Partridges should be fed on chopped egg, bruised wheat, bread-crumbs, and curd. They must always have water. If the hen with the young is put near a grass or clover field, they will run therein, and find much of their food; but this is only a help. The hen should not be allowed to leave the run, and it should be secured from vermin at night. Cats are great destroyers of young Partridges. Maggots of any kind are very serviceable to young Partridges, but especially the larvae, or "eggs," as they are usually called, of the ant. In June and July they prefer these to any other food. We have no recollection of your inquiry about a cow shed.

We have again deferred the answer to the "COUNTRY PARSON" because we are in daily expectation of being able to give him more information than he asks.

FERTILE WORKERS (W. Carr).—Having observed this phenomenon in our own colony, we have no doubt whatever of its occasional but very rare occurrence.

BUFF AND BLACK-SPANGLD PIGEONS (A Subscriber).—Your Pigeon is evidently one of the varieties of Le Pigeon Maille: probably the warm-coloured variety, known here variously as Porcelaine, Hyacinthe, Victoria, and by other names.—B. P. B.

HIVES (Ferdinand).—For five postage stamps you can have from our office, free by post, if you send your direction, "Bee-keeping for the Many." It contains drawings and a description of the Woodbury hive. Martlett's and Neighbour's hives are much the same. The former, we believe, cannot now be purchased.

SAFEST TIME FOR PUTTING ON A SUPER (A Would-be Bee-Master).—The middle of a fine day is the best time to put on a super as well as for watching the proceedings of bees and performing most other operations on them. When honey is plentiful, their attention is so concentrated on the one grand object of collecting and storing it, that they take but comparatively little notice of the operator or spectator. Towards evening, when the day's work draws near its close and most of the foragers have returned home, they are far more on the alert, and their suspicions are so readily excited that, as in your own case, stings are frequently inflicted with little or no apparent provocation.

SILKWORKS' SILK.—A lady wishes to know how to dispose of the silks, and whether it should be wound off or left on the cocoons.—C. W. P.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JUNE 27—JULY 3, 1865.	Average Temperature near London.			Rain in last 38 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
27	Tu	Privet flowers.	72.0	48.6	60.3	18	47 47.8	19 47.8	38 8	17 10	4	2 43	178
28	W	CORONATION OF QUEEN VICTORIA.	73.3	49.3	61.3	15	47 3	19 8	42 9	41 10	5	2 56	179
29	Th	Lady's Bedstraw flowers.	72.8	48.6	60.2	10	48 3	18 8	47 10	3 11	6	3 8	180
30	F	Pimpernel flowers. (1862.)	72.7	48.3	60.0	12	48 8	18 8	49 11	24 11	7	3 20	181
1	S	PRINCESS LOUIS OF HESSE MARRIED	72.3	51.7	62.0	18	49 3	18 8	51 0	48 11	8	3 31	182
2	Sun	3 SUNDAY AFTER TRINITY.	73.3	51.5	62.4	14	50 3	18 8	54 1	morn.	9	3 43	183
3	M	Lime tree flowers.	74.2	50.7	62.5	16	50 3	17 8	57 2	12 0	10	3 54	184

From observations taken near London during the last thirty-eight years, the average day temperature of the week is 72.9°, and its night temperature 49.8°. The greatest heat was 91° on the 30th, 1862; and the lowest cold, 34°, on the 30th, 1863. The greatest fall of rain was 1.18 inch.

MANURING THE AIR.



MANURED atmospheres may seem at variance with the requirements of a plant and contrary to the common course of Nature, but it would be no difficult task to prove that manured atmospheres are within the order of Nature herself. I shall not, however, attempt to do this, but I take for granted that plants feed at night by their leaves, or absorb from the atmosphere nourishment nearly, if not quite,

equal in amount to that derived from the soil. There is not a gardener but will agree that a hotbed of leaves, dung, or other fermenting materials is more suitable for the growth of plants than any other description of artificial atmosphere. It was a common practice to place fermenting dung in vineries on commencing to force, and it was usual to start nearly everything by the aid of dung hotbeds. Whether knowing or not knowing that the steam of fermenting dung was highly conducive to vegetable growth, our fathers in horticulture employed it as largely as we do little. It might not be known to them that the steam generated by the fermentation of the dung parted with its ammonia, and fed the plants by the foliage; and I believe that they were perfectly ignorant of the value of the vapour of hot dung as a manurial agent, and only valued it as maintaining a moist and more uniform heat than flues. At the present day the whole system of heating has undergone so great a change by the introduction of hot water in iron pipes, that dung hotbeds are but little used in comparison to what they were. In the good old times syringes were but little employed, they came in with the present system of heating, and were necessary to counteract the evils of a dry heat; and supplying moisture by sprinkling the floors and syringing the foliage was no doubt prompted by the knowledge that a moist heat was necessary. Accordingly, these proceedings were intended as an equivalent for the steam of fermenting materials. These means, however, were not sufficient, and tanks and guttered pipes were soon invented to more regularly maintain a moist atmosphere, and with the same object flue-covers were made hollow to hold water; yet, after all, an equivalent for the moist atmosphere of hot dung was not secured. It was not simply moisture that it was necessary to supply, but the ammonia of the dung as well: hence we find soot water used by Mr. Fish, and of late guano water by Mr. Thomson, of Archerfield. It must be evident that soot and guano possess little evaporative except ammonia,

No. 222.—Vol. VIII., New Series.

and this is precisely what the atmosphere of a house heated by fermenting materials contained along with watery vapour.

I need not search for further evidence in support of ammonia, as vapour, being a manurial agent absorbed by the leaves. Its utility as an invigorator of growth and insect-destroyer is undoubted. If there is an insect that may be attributed to a deficiency of moisture in the atmosphere it is red spider; its presence is ever a sign of a vitiated parched atmosphere, not necessarily dry but lacking the vapour of water fresh from the clouds, which is equally destructive to this pest with soot water. Ammonia few insects can well endure, and, unlike other remedies, it contributes to the health of the subject. It might be argued that red spider does not attack vigorous plants in the same atmosphere. I am not quite certain that plants do not throw off through the leaves any excess of nutrition absorbed by their roots, and this may be retained within the house through early closing, and absorbed by the leaves again at night, and plants would thus be fed, as they naturally are, by the dew at night.

I do not think it will be doubted that fresh rain water is more conducive to growth than that a month old from a tank, or if it be questioned it would be well to account for artificial waterings never being so beneficial as natural ones. If it were possible to have houses so constructed that they could be opened to admit of the rain falling on the plants or fruit trees, I am firmly persuaded it would do more good than many artificial applications.

Setting aside many considerations, we find that some manures are richer in ammonia than others—soot contains a considerable amount, and more especially Peruvian guano and sheep's-dung. These are the most powerful, and scarcely less so are the drainings of a dunghill when they consist of the washings of horse-droppings. My experience is limited to the liquid manures made from these substances. They are made in a tub or barrel holding twenty three-gallon-watering-potsfull of water, or 60 gallons; a peck of fresh sheep's-dung, the same of soot, half a bushel of horse-droppings (fresh), and 15 ozs. of guano are put in each respectively, and soft water poured on them, and well stirred up. In this state the liquid is poured into the evaporating-troughs, and used for sprinkling the floors, &c., of the houses, but is not applied to any highly-heated surface, such as a flue or hot-water pipe from which it would be quickly evaporated. For syringing the clear liquid only is employed, and always at the time of shutting up the house or a little afterwards. In whatever form it is applied, whether in evaporating-pans, sprinkled on the floors, or syringed on the plants, the atmosphere is sensibly impregnated with ammonia, and the odour is not unpleasant, except in the case of soot water, the vapour from which retains the sooty smell. The drainings of the dunghill diluted with an equal volume of water, used in evaporating-pans and for sprinkling the floors, &c., are the most objectionable on account of the smell, though those not actually aware of this liquid being used would not feel annoyed. For syringing with, it is diluted with six times

No. 274.—Vol. XXXIII., Old Series.

its volume of water, and always in the afternoon when the sun has lost much of its power. I must remark that the drainings used for this purpose contain no urinary matter except that derived from the solid manure.

All these liquids are used of the same temperature as that of the house, the liquid being heated and strained through a muslin or tiffany bag, so that dirt may not get into the syringe. Some discrimination is necessary in using the manure water for syringing purposes. When the leaves of Vines are young, and consequently tender, it should be diluted one-third more, and the same for Melons, Cucumbers, and all plants of which the leaves are young and soon scorched. After they attain their full size it may be given at the strength named, but always with the declining sun. The clear liquid only is used for syringing with.

I have used all the liquids named at four times the strength stated above for filling evaporating-troughs, but only for destroying insects; for I find that the ammoniacal vapour when very strong is apt to scorch the leaves, particularly when the air becomes surcharged with it and the sun is powerful. I may also state that when the evaporating-troughs are filled to overflowing, and the liquid drips on the hot pipes or flues, the air is so quickly filled with the vapour that the leaves of Vines and similar plants, especially when young, are scorched. When, however, the leaves have arrived at that stage at which red spider usually attacks them there is no danger in using the liquid at four times the strength, and as charging the atmosphere with ammoniacal vapour is necessary to destroy mealy bug and red spider, that strength becomes a matter of necessity, otherwise only weak doses are needed as invigorators, whilst syringing the foliage renders it very distasteful to insects.

Ammoniacal vapour, though desirable, should be used with care. Smooth or plain-leaved plants, as Vines, Figs, Peaches, Plums, Cherries, Pines, Gardenias, Oranges, and all those usually attacked by red spider, will endure vapour of double the strength I have stated, and may safely be syringed with the liquid after the leaves attain their full size; woolly and soft-textured leaves, as those of Gloxinias, Azaleas (though not soft but hairy), Gesneras, and Pelargoniums, had better not be syringed, and should never be exposed to a highly ammoniacal atmosphere.

Finally, I would state my conviction of the little reliance to be placed on ammonia alone, thinking it best applied along with phosphates. I find the different salts of ammonia vary so much in strength as to make their use unsafe. The best that I have used was a solution of ammonia made by dissolving 1 lb. of carbonate of ammonia in a gallon of water, keeping the solution in a close-stoppered bottle, and putting a little in the evaporating-pans at the time of shutting up the house. A pint was allowed for a house 30 by 18 feet, 5 feet high at the sides, and 12 feet from the centre to the apex. I must admit that this sensibly invigorated the foliage of the plants, it being larger, and the roots of Orchids were more plentifully emitted, but there was not that increased greenness in the leaves which is the characteristic of an atmosphere manured with guano or sheep's dung in solution. In fact, the foliage was not of so good a colour as without the ammoniacal vapour. We gave it up and converted the carbonate into the sulphate of ammonia by dropping sulphuric acid into the solution till all bubbling ceased. For stimulating the growth of plants, sulphate of ammonia at the rate of 1 oz. to eight gallons of water, is, perhaps, unequalled, it being applied the same as other liquid manures to plants in a growing state.

After giving it may not be out of place to ask for information. Has the presence of ammonia been detected in atmospheric air by analysis? Liebig says nay, and yet he notes its presence in rain water and snow. There is every reason to believe that it does exist in the atmosphere, and descends with the dew and the rain; * but if it be traceable in water,

* That falling at Rothamsted, in Hertfordshire, twenty miles from London, has been examined by Professor Way. He found (grains) in an imperial gallon in—

	Ammonia.	Nitric acid.		Ammonia.	Nitric acid.
January.....	0.092	0.017	July	0.161	0.017
February.....	0.104	0.042	August.....	0.080	0.060
March	0.086	0.021	September ..	0.093	0.021
April	0.123	0.035	October	0.061	0.036
May	0.080	0.035	November ..	0.054	0.018
June	0.125	0.080	December.....	0.08	0.017

Ammonia and Nitric acid in the atmosphere.

why not in air prior to rain, when the air is often nearly saturated with moisture? Fact proves the presence of it or some other powerful stimulant descending at night with the dew, and exciting plants into growth days even before actual rain falls, and if it come a shower without wetting the earth beyond the surface, what an alteration it makes in the face of nature. The drooping leaves revive, the buds burst their scales, flower-buds swell and await the first gleam of sunshine to unfold their beauties. Then rain water from an open tank some days after falling, is less invigorating than fresh, winter rain water less marked in its effects on vegetation than that which falls in spring and summer. Snow water is the softest of water, it contains ammonia.—G. ABBEY.

VARIATION OF COLOUR IN HYDRANGEA FLOWERS.

I HAVE read with much interest Mr. Robson's article on the Hydrangea, but I am sorry it does not go further towards solving the mystery as to the cause of the flowers being occasionally blue; and I hope the discussion he has invited may give us a little more light on the subject, but I am not very sanguine on that point, as I think that if blue flowers could be produced at will some of our great Covent Garden florists would have made a display of such before this. The blue-flowered Hydrangea has been a great mystery to me from a boy. I have seen a plant produce blue flowers one year and pink the next, or, perhaps, a year or two pink, then blue, and so on; but I never saw a very young plant with blue flowers. What seems more curious than all was one large plant I knew that used to produce blue flowers on one side and pink on the other—the most shaded side produced the blue flowers. Has Mr. Robson ever seen or heard of such an occurrence before?

It is not at all uncommon to see the Hydrangea with blue flowers in the neighbourhood of which I am writing—namely, on the borders of the Forest of Dean, in Gloucestershire, where I have seen some plants with pink, others, perhaps in the same bed or border, with blue flowers, and to all appearance in precisely the same sort of soil, which was a heavy loam, resting on a sort of red sandstone, where the Foxglove was quite at home; and so far agreeing with what Mr. Robson says of the Rhododendron.

The Hydrangea used to be cultivated much more in that part of England than in the others to which I have been since leaving there—I mean as an out-door plant. Mr. Robson says it is quite hardy, but I am not quite sure of this; for I have seen it killed in several places in the winter, but in some only killed down to the ground, yet rendered useless as a flowering plant. Here, and at a place in Kent (near Ashford), I have found they will not stand the winter—at least not their shoots.—J. BRYAN, *Haydon House, Boyston*.

[Some years since the late Mr. Beaton wrote to us upon this subject, as follows:—

"There is one disadvantage in August-made cuttings of the Hydrangea, which is, that the flowers of them come all of one colour, and that the same as that of the parent plant, whether it be blue or pink; but those made in February may be made to flower blue or pink at will. If the mother plant produced blue flowers in the former seasons, and you force it in February, cut off your cuttings as soon as they make three joints, and when they are rooted place them in a rich, light compost, say one-half leaf-mould or very rotten dung, and the rest of any good garden soil, they never fail to produce pink flowers; whereas, if taken from a pink-flowering parent, and after rooting growing them in strong yellow loam, with about a sixth part of iron filings mixed with it instead of sand, nine out of ten of them will produce blue flowers. I have proved this over and over again, and have seen it in other hands, but I never could get an August cutting to differ in colour from that of the parent plant. The reason seems to be that the juices of the parent plant have already, by a season's growth, formed the substance, or the organised matter, as physiologists call it, out of which flowers are produced, so that no after-treatment is able to counteract the effect; whereas if cuttings are separated from a plant at so early an age as when they only attain a few inches in length, and are then made to grow in iron rust

and loam otherwise impregnated with iron, which is well known to favour the production of blue flowers in the Hydrangea, the organised matter referred to is formed from juices impregnated with iron oxide, and so produces blue flowers. The intensity of the blue is, I believe, according to the perfect oxidation of the iron. Chalk water never fails to counteract this effect of the oxide on the flower, as we have often proved here, so that, to give the fairest chance to the experiment of getting blue Hydrangeas, I would recommend the cuttings to be taken as early in the spring as possible, to strike or root them in red sand, to grow them in nothing but red loam and iron filings, according to the above proportions, and never to water them but with rain-water: but I am not sure whether rusty water from hot-water pipes would not add to the success of the experiment; at any rate this rusty water is not injurious to these Hydrangeas. In some parts of the country the natural soil will produce blue Hydrangeas, and in such places it is difficult to meet with pink ones; and, what is singular enough, the Rhododendrons will flourish in such soil, although apparently devoid of all traces of vegetable matter. There is also a kind of peat earth which invariably turns the pink to a blue Hydrangea, but all the peat that we have access to here (Suffolk), does just the contrary. To have pink Hydrangeas next summer, let us, therefore, make our cuttings in August from pink parents."]

SIEBER, THE PLANT COLLECTOR.

FRANCIS WILLIAM SIEBER was a native of Prague, in Bohemia, and from this inland capital he succeeded in extending his botanical travels, and those of his assistants, over several distant portions of the globe, and I think that the number of specimens of plants collected thus may well be put down at one million. As is the case with Beethoven, who is said to have been a son of King Frederic William II. of Prussia, Sieber was a son of the Emperor Francis of Austria, and he certainly bore a resemblance to some of the fairer members of the Hapsburg family. His frame was well formed, and this, and the vivacity of his mind, fitted him for the task he had traced out for himself.

It was about the year 1812 that Hoppe, of Ratisbon, began to publish his "Dried Plants of Germany;" Sturm's "Flora," also composed of small, neatly-coloured engravings, excited the attention of the studios amongst us. Sieber, whose relations were in easy circumstances, had received a good school education, and studied botany under Willibald Schmidt, the author of the "Flora Bohemica," in folio. After some preliminary excursions in the Bohemian Sudetes, he started for the Austrian, Carinthian, and Styrian Alps, Saussure and Hacquet being his patterns then. It was a pleasure to listen to Sieber, when he related how he first found and collected the *Wulfenia carinthiaca*, those rare *Saxifragas*, and *Gentianas*, only to be found in certain remote localities of Carinthia and Carniola; already my departed friend collected, *at in grosso*, one and two hundred specimens, if he could get them. Sieber trafficked from the first, like Hoppe, in plants, but not then to the same extent as when he published his "Flora Exsiccata Novae Hollandiae," &c.

Sieber's next trip was to Italy, then under Napoleon's rule, and difficult of access, especially for an Austrian subject. The "Flora Italica," was the first considerable issue of dried plants, and the printed tickets to those specimens were a curiosity in themselves. "*Ixia bulbocodium*, in rupe Tarpeja, Roma;" "*Anthyllis barba-Jovis*, in nubibus Insulae Capreae;" "*Lamium gargaricum*, in monte Gargano, Apulia," &c. These issues widely diffused the love of botany, and in Bohemia produced a rich crop of distinguished botanists. Of his stay in Naples a curious incident may be related. Being in the island of Capri, he ventured himself on parts of the rocks where no one had ever been before. This, and perhaps the papers he had about him for placing his plants in, attracted the notice and suspicion of those on board some English cruiser in the Bay of Naples, and they fired several cannon shots at our botanical collector, which, however, fortunately did not reach him.

Returning to Prague from such excursions, a couple of years were occupied in arranging, naming, publishing, and

disposing of these plants. His subscribers became in succession numerous and important, amongst them the late King of Saxony, for whom Sieber collected choice specimens (*Pracht exemplare*) in all his travels. This splendid collection was probably burnt during the outbreak in Dresden, in 1849. It is natural to suppose that our friend would not have sufficed for the large amount of work connected with his enterprise, and he had about him some young gardeners to help him, and thus the idea arose, successively much expanded, to send some of these youngsters on similar botanical errands. I believe it was young Katschy whom he first sent to Martinique for that purpose. Imagine a young Bohemian journeyman gardener going to the forests and mountains of a West India island! Still those lads all turned out well, especially Boyer, who afterwards became Professor and Director of the Botanical Garden in the Isle of France. Still Sieber used a means to facilitate, nay to make possible, such botanical expeditions. There was a book prepared in small folio, and on the leaves were fixed original or cultivated specimens of such plants as were known or supposed to grow in Martinique. I was present when Katschy returned, and certainly there never had arrived in Europe such a vast collection of tropical plants for publication and sale. Sieber generally divided his "Herbaria Sicca" into centuries, which were sold for from forty to sixty or eighty florins (10 to £1) each.

As Schultes and Hacquet had directed my late friend to the alpine world, it was Tournesfort who gave him his easterly direction. Sieber visited first the island of Crete, made a long stay at Canea, ascended the Ida, and as he was a man of manifold acquirements, surveyed the Labyrinth. This Cretan, as well as his subsequent Egyptian and Jerusalem voyages, appeared in print, and these volumes are even cited now. In Egypt Sieber went up to the first cataract, and many were the rare and new plants published in the "Flora Egyptiaca," as well as the "Hierosolymitana." Such travels connected with the collection of tens of thousands of plants were expensive then, but I think that the Emperor Francis had settled an allowance on him or his mother.

A few years passed again away in the arranging and publishing of these three herbaria. Besides, Sieber was in communication with most of the leading botanists of Europe—Tenore, in Naples, De Candolle, &c.; but he could never have succeeded in such a wide task, if he had viewed botany only in its dry and matter-of-fact features. Sieber read and knew the fine philosophical works which Kant, Sprengel, Willdenow, and others had published, and many were the pleasant and exciting conversations which I had with him in those rooms of his in the corridor of the old Convent of St. Jacob, in the Kleinseite of Prague. Then he would dress in some of the costumes of chamois hunters, or of Turks and Arabs, which he had brought with him.

About this time, 1817, Boyer went to Madagascar, and it may be said that he acquired even a public character with King Radama. The plants sent thence to the Museum of Vienna, the King of Saxony, &c., were surprising.

But now came the time when my late friend planned and executed his last and greatest botanical expedition—viz., that to the Australian continent. At that time specimens of wild Australian plants were rare even in England, because Banks, Solander, Brown, and Cunningham (?) had not collected specimens for publication and sale; therefore Sieber went to the Antipodes. His head quarters were Sydney, the environs of which, and Botany Bay, are rich in plants. But his enterprising spirit pushed him much further, and he was the first who explored the Blue Mountains, and the plains beyond them, shortly before discovered by Wentworth, Lawson, and Blaxland. These collections he made on horseback, not riding himself, because he was a wonderful walker, but the harvest of plants was so great, that they had to be stowed on the back of a horse. These thousands on thousands of specimens could not have been preserved in the ordinary way; but Sieber had invented an especial method to arrange and dry specimens for the herbarium.

To account for his subsequent melancholy death, it is to be stated that he was during his travels in communication with the Emperor of Austria; and when a letter arrived from Vienna, after a stay of several months in New South Wales,

Sieber returned to Europe, with a collection of dried plants, the bulk of which was contained in a number of cases, and it took again a considerable time to arrange and publish the several centuries of the "Flora Exsiccata Nova Hollandiae," in his house at Prague. He was altogether an exceedingly active and successful collector, because even the number of bird and other skins he brought with him was surprising. His correspondence with the first botanists of Europe increased every day, and a genus of plants (Siebera), and numerous species were called after him.

Sieber was in the habit of often writing to Vienna, and when such letters arrived, the Emperor would say, "Oh, let John (Archduke John) read them to me at table." It may be that our friend might before, and on a critical occasion, in 1820, have alluded to political events. So much is certain, that on his return from Sydney, he stated to the captain of the ship, that there were agents of Prince Metternich abroad who had orders to murder him. Sieber, like all men who have accomplished aught extraordinary, was a highly cultivated person, and at a later period, about 1827, he was occupied in a dramatic work, "Plato in Sicily." However, all his MSS. on various subjects have disappeared. His mind was now occupied with subjects extraneous to his original pursuits, and thus it cannot be surprising to find him, in 1830, in Paris, engaged in the political affairs of the French Revolution. His collections had been transferred to Vienna, and as Professor Lichtenstein (the African traveller) was in the Austrian capital, portions of it were transferred to the Berlin Museum. Then, that life-full and bright career which had begun amongst the choicest plants and flowers of the Styrian and Carinthian Alps, and had pursued its course in southern Italy, in Crete, Egypt, and New Holland, drew to a sad and melancholy end. Whether Sieber became really insane or not I cannot say, but my poor friend died (be it said to the eternal shame of the Prague authorities), in the lunatic department of the hospital of that city.

His works and plans, however, survive him to a certain degree, because some of his pupils travelled and collected in Kordofan, and other most remote places. His method of preserving, and well preserving, thousands of specimens of dried plants, is worthy of being generally known.—L.

REPORT ON THE BEDDING PELARGONIUMS GROWN AT CHISWICK, 1864.

By THOMAS MOORE, F.L.S., SECRETARY TO THE FLORAL COMMITTEE.
(Concluded from page 470.)

SERIES V.—SILVER VARIEGATED VARIETIES.

1. LEAVES ZONATE AND MARGINATE.

(a) Margins white.

Argus *** (G. Smith).—Moderately vigorous habit; leaves with whitish edge and indistinct pink zone; flowers very bright light scarlet, well formed, and in good trusses.

Burning Bush (Hally).—Dwarf habit; leaves with whitish edge and pink zone; flowers light scarlet.

Countess of Warwick *** (Kinghorn).—Vigorous free habit; leaves whitish at the edge and with a dark red zone; flowers abundant, scarlet.

Elegans (E. G. Henderson & Son).—Moderately vigorous habit; leaves white-edged and faintly pink-zoned; flowers corise.

Fontainebleau *** (E. G. Henderson & Son, Scott).—Dwarf habit; leaves with a whitish margin and a faint pink zone; flowers corise.

Julia ** (Turner).—Vigorous habit; leaves with very slight pink zone and whitish margin; flowers scarlet, in good trusses.

Little Beauty (E. G. Henderson & Son).—Dwarf habit; leaves very white at the edge, with a deep red zone; flowers scarlet.

Picturatum *** (Turner).—Dwarfish habit; leaves flat, with whitish edge and well-marked pink zone; flowers light scarlet.

Rainbow (Scott).—Moderately vigorous; leaves with pink zone and whitish edge; flowers light scarlet.

White Star (Turner).—Vigorous and moderately vigorous

habit; leaves cupped, whitish at the edge, and having a dull zone; flowers rather narrow-petaled, in fine trusses, pale corise pink. Also grown as Victoria.

Silver Chain ** (Scott, E. G. Henderson).—Compact dwarf habit; leaves with a broad whitish edge; flat, with indications of being zonate; flowers bright rosy corise, large and well formed, darker than those of Venus, which it very closely resembles; the foliage, however, is better.

The Countess (E. G. Henderson & Son).—Vigorous and coarse in habit; leaves with whitish edge and dark zone; flowers scarlet.

2. LEAVES MARGINATE, NOT ZONATE.

(a) Margins white.

Alma *** (Scott, Turner).—Moderately vigorous habit; leaves with a broad whitish edge; flowers deep scarlet. Of free healthy growth.

Bijou *** (Low & Co., Turner).—Moderately vigorous; leaves flat, with a whitish edge; flowers of good form, scarlet. Considered better than Jane, but of a more compact-growing habit.

Jane *** (Turner).—Moderately vigorous habit; leaves whitish at the margin, rather cupped; flowers scarlet. Of good free habit, covering the ground well.

Mangles's Variegated (Scott).—Of free spreading habit; leaves lobed, with a broad whitish edge; flowers small, pink. Useful.

Mountain of Light (Fraser).—Dwarf habit; leaves whitish at the edge; flowers scarlet.

Mountain of Snow (Fraser).—Dwarf; leaves with whitish edges; flowers loose, scarlet.

Mrs. Lennox (Taylor).—Dwarfish habit; leaves white-edged; flowers scarlet. The whitest-marked in the collection, but considered to be practically superseded by Bijou and Jane.

Queen of Queens *** (Bull).—Moderately dwarf; leaves whitish at the edge; flowers scarlet. A free grower, and dwarfer in habit than Jane.

Variegated Dandy (Scott).—Very dwarf and compact; leaves very small, with a narrow whitish edge. Useful in some situations.

(b) Margins cream-coloured.

Annie ** (Kinghorn).—Vigorous habit; leaves large, with a broad creamy edge; flowers scarlet, of a free and rather coarse habit.

Flower of Spring *** (Turner).—Moderately vigorous compact habit; leaves broadly edged with cream colour; flowers large, of good form, deep corise-scarlet.

Hendersonii (E. G. Henderson & Son).—Of rather coarse habit; leaves creamy at the edge; flowers scarlet.

Koh-i-noor (Scott).—Dwarfish habit; leaves with creamy edge.

Lady Plymouth (Turner, Fraser).—Of free spreading habit; leaves bipinnatifid, with creamy edges. An old useful sort.

Maid of Orleans (Scott).—Dwarf habit; leaves with cream-coloured edges; flowers pale corise-scarlet.

Meteor ** (Dixon).—Moderately vigorous habit; leaves with a broad creamy-white edge; flowers deep scarlet.

Silver Queen *** (Taylor).—Vigorous habit; leaves large, round, scarcely lobed, flat, with a well-defined broadish creamy edge; flowers abundant, loose, rose-pink.

The Bouquet (E. G. Henderson & Son).—Moderately vigorous habit; leaves creamy at the edge, cupped; flowers dull corise.

Variegated Prince of Orange (Fraser).—Dwarf compact habit; leaves small, lobed, scented, narrowly edged with cream colour.

Venus (E. G. Henderson & Son).—Dwarf compact habit; leaves with a broad creamy edge; flowers bright rosy corise. Similar to Silver Chain, but a few shades less pure in the colour of the leaf.

SERIES VI.—GOLDEN VARIEGATED VARIETIES.

1. LEAVES ZONATE AND MARGINATE.

Golden Baron Hugel (Wills).—Very dwarf spreading habit; leaves with a bronzy zone; flowers scarlet.

Golden Woodwardiana (Wills).—Rather vigorous habit; leaves yellowish-green, with indistinct bronze zone; flowers scarlet, of good form.

Lottie (Wills).—Dwarf habit; leaves yellowish with bronze zone; flowers corise-scarlet.

Mrs. Milford (E. G. Henderson & Son).—Vigorous habit; leaves with a very broad bronze-coloured zone, becoming at length yellow; flowers deep scarlet, distinct.

Mrs. Pollock *** (E. G. Henderson & Son).—Vigorous habit; leaves flat with a broad yellow border, and zone of deep red; flowers scarlet. A very beautiful variety.

Sunset *** (E. G. Henderson & Son).—Dwarfish and spreading habit; leaves smooth, flat, with a broad yellow border and distinct zone of light orange-red; flowers cerise scarlet. A very beautiful variety.

2. LEAVES MARGINATE, NOT ZONATE.

Cloth of Gold *** (Veitch, Turner).—Dwarf habit; leaves flat, downy, deep yellow, with small bright green disk; flowers deep scarlet.

Golden Cerise Unique (Veitch).—Moderately vigorous and free habit; leaves with yellow edge and reddish zone; flowers small, cerise.

Golden Chain *** (Scott; Turner).—Spreading habit; leaves broad, flat, surrounded with a deep yellow edge; flowers deep cerise-scarlet.

Golden Fleece *** (Veitch, Turner).—Dwarf spreading habit; leaves flat, yellow, with green disk; flowers abundant, bright scarlet. Appears to be of freer habit than *Cloth of Gold*.

Golden Harkaway ** (E. G. Henderson & Son).—Dwarf habit; leaves lobed, and having yellow margins; flowers loose, orange-scarlet, tinted with cerise.

3. LEAVES WHOLLY YELLOW.

General Longstreet (Wills).—Apparently not free; leaves yellowish; flowers scarlet.

Golden Leaf (Carter & Co.).—Dwarf habit; leaves yellow; flowers scarlet.

Golden Little David (Wills).—Dwarf habit; leaves yellow. This plant was not vigorous enough to produce flowers.

Robert Fish (Wills).—A gold-leaved variety, with orange-scarlet flowers of the semi-nosegay character, and highly promising as a dwarf sort for edgings, but not well developed. —(*Proceedings of the Royal Horticultural Society.*)

CERASTIUM TOMENTOSUM—ARABIS LUCIDA VARIEGATA AS EDGING PLANTS.

I OFTEN find the *Cerastium tomentosum* mentioned and recommended as a border for Geraniums; but as my *Cerastium* has been in full flower for the last fortnight or more, while the Geraniums were only lately bedded out, I know not how these can flower together. I have a six-foot-wide border of *Cerastium* one sheet of snow, with circular patches of Geraniums at regular distances in the midst, but the *Cerastium* is so much taller than the Geraniums, that it quite smothers and hides them. Do you consider the *Cerastium Biebersteini* superior to the *C. tomentosum*? The foliage is sometimes richer, but the flowers so scattered and few that I cut them off, and doubt about using it further.

Is it sufficiently ascertained that there is a good *Arabis lucida variegata* yellow enough to look handsome, and to make it worth inquiring for from nurserymen?—AGNES.

[The *Cerastium tomentosum* is very beautiful when in full bloom, and then it would be apt to dwarf out of sight scarlet Geraniums when first planted out, unless these were very large plants. Even in your case, with circles of Scarlet Geraniums in your six-foot-wide border of *Cerastium*, the tall flowers of the *Cerastium* will shade the Geraniums in this scorching weather, and thus do good. The *Cerastium*, however, makes the most effective bordering for scarlets, blues, and purples, after the flowering is over, and the edging is nicely trimmed. One great advantage is, that you may cut it pretty well as you will. One of the finest massive edgings we ever saw was at Trentham (see account of that place in Vol. V.) Mr. Tyerman of the Liverpool Botanic Gardens also does it admirably; but in both these places the mass of white shoots was more valued than the pretty white flowers. In the damp atmosphere of Liverpool Mr. Tyerman cuts the *Cerastium* close to the ground early in spring, and when it shoots takes it up, divides, and plants in narrow rows, and then it becomes large enough during the summer. Our correspondent may therefore be glad rather than otherwise that her *Cerastium* will be a better

edging for small Geraniums without the flowers than with them.

We like the *Cerastium Biebersteini* very well, but not better than *tomentosum*, and the former is not so hardy and will not bear the knife and the shears so well as the latter. In some soils it comes very white, in others and with dripping skies it is apt to come greener than *tomentosum*. Both require bright sun to bring out their pearly whiteness. We have two little gardens on grass, each clump being edged with one or the other of these *Cerastiums*, and the effect is very pleasing and the saving of other plants in planting is great. The yellow *Arabis variegata lucida* is very good for small edgings, as distinct for the yellow markings as the other variegated one is for white markings, but both are apt to revert to the green original on good rich soil. It is decidedly worth having.]

CRYSTAL PALACE ROSE SHOW.

As might have been expected from the extreme heat and burning sun that we have for some time experienced, the collections of Roses were both deficient in number and quality as compared with previous years. Leaving to others the task of enumerating the prizes, &c., of the general exhibition, I would confine my remarks to the new Roses of 1863 and 1864, that including, in fact, Roses from the autumn of 1862 to the spring of 1865, as Roses sent out from France in the autumn of 1862 are not sent out here until 1863, while those of last autumn are included in the lists.

Messrs. Paul & Son were placed first with a fine selection, and considering the season, an exceedingly well-bloomed collection of the following, of which the finest are marked with an asterisk. **Duchesse de Caylus*, *Celine Gonod*, *Jean Goujon*, *Lady Emily Peel*, *President Lincoln*, **George Prince*, *Princess of Wales*, *Bernard Palissy*, **Alpaide de Rotalier*, *Madame Josephine Guyot*, **Duc de Bassano*, *Gustave Bonnet*, **Madame Victor Verdier*, *Madame Alfred de Rougemont*, **Rev. H. Dombrain*, **Lord Macaulay*, *Dr. Andry*, *Triomphe de Villecrenes*, *Paul Desgrand*, *Emotion*, *Comtesse de Coucy*, **Pierre Notting*, *Louise Damazin*, *Souvenir de Comte Montault*, *Madame Soupert*, **Laurent Descourt*, **Gabriel Peyronny*, *Madame de St. Arnaud*, **Leopold Premier*, *Alphonse Belin*, **Claude Million*, **Lord Herbert*, *Eugene Verdier*, **Hamlet*, **Madame Derreux Douvillé*, *Vainqueur de Goliath*, *Madame de Stella*, *Jean Tournais*, *Amiral La Peyrouse*, *Dr. Spitzer*, *Pavilion de Pregny*, *Paul de la Meilleray*, **Arles Dufour*, *Madame C. Doffoz*, *Abbé Berlese*, *Louise Margottin*, **Madame Vallembourg*, *Duchesse de Caylus*, a seedling of Charles Verdier's, is one of the best Roses of this season—a lovely pinkish crimson, a shade of colour that we most want; while of those of last year *Madame Victor Verdier* and *Pierre Notting* were the best. *Arles Dufour* is a fine Rose, while *Louise Margottin* was the most delicate pink of Bourbons. *Gabriel Peyronny* and *Madame Vallembourg* were also fine, as were *Hamlet* and *Lord Herbert*, but all of that crimson shade of which we have such an abundance.

Mr. Keynes, of Salisbury, was second. His Roses were *Louise Van Houtte*, **Alpaide de Rotalier*, **Prince Henri de Pays Bas*, **Centifolia rosea*, **Baron Pelletan de Kinkelin*, *Bernard Palissy*, *Louise Margottin*, *Emotion*, *Abbé Reynard*, *Senateur Reveil*, *Triomphe de Villecrenes*, *Reine de la Pape*, **Duchesse de Morny*, *Macaulay*, **Claude Million*, **John Hopper*, *Lays*, **Rev. H. Dombrain*, *Jaune d'Or*, *Kate Hausburg*, *Madame de Stella*, *Alphonse Belin*, *Gabriel Peyronny*, *Laurent Descourt*, *Madame Soupert*, *Jean Tournais*, **Maréchal Souchet* (Guillot), **Leopold*, **Joseph Fiala*, **Lord Clyde*, *Amiral La Peyrouse*, **Madame Freeman*, *Paul de la Mielleray*, *Abbé Reynard*, *Paul Desgrand*, *Lamartine*, *Madame Victor Verdier*. Of these I have again marked the best; *Duchesse de Morny* is a good Rose, *Maréchal Souchet* is a fine dark. *Madame Freeman* in its expanded state reminds one of *Souvenir de la Malmaison*; *Joseph Fiala* is a fine large-petalled Rose; *Claude Million*, a good dark; *Prince Henri de Pays Bas*, a good crimson; and *Centifolia rosea*, a fine rose; *Baron Pelletan de Kinkelin* is a fine rich dark Rose.

Mr. Cant was third. Amongst his Roses was a fine *Xavier Olibo*, a very rich dark colour, adding another to the many good Roses which Lacharme has given to us.

In the decorative stands the competition was confined to those of Miss March's design, with the exception of one from Mr. Turner, which was very pretty; but the Lycopodium used had better have been replaced by Adiantum. Mr. Round's gardener, was first, and Mr. Turner second. The Roses in both these stands were good, while the arrangement was excellent. It seems, however, as if no fertility of invention can devise any real improvement on Miss March's original design. One may have something to say by-and-by about the novelties amongst Roses; but, in the meantime, I think it is clear that in Duchesse de Caylus and Xavier Olibo we have a great addition to our flowers.—D. Deal.

OUR remarks on the general show will be brief, and chiefly confined to the enumeration of the principal prizetakers; for the observations of our valued contributor "D. Deal," have already told more than half the tale. The great heat of the last few days carried fear into the heart of rosarians, and Friday, with a temperature of 89° in the shade and 136° in the sun, brought dismay—so much so that many intending exhibitors withdrew from competition, and the quality of the blooms of others, who did venture to put in an appearance, was seriously impaired. This drawing back of exhibitors at the eleventh hour must have seriously interfered with the arrangements of the most active and most courteous of Superintendents, Mr. Wilkinson, but before the Judges came round all was in excellent order, and the line of tabling, though not so long as in former years, presented a fine appearance.

In Class I., ninety-six varieties, one truss of each, Mr. Mitchell, of Maresfield, was first. Victor Verdier, Madame Vidot, Maréchal Forey, Madame Rivers, Gloire de Santenay, Impératrice Eugénie, Louise de Savoie, Souvenir de la Malmaison, Baron Adolphe de Rothschild very rich in colour, Kean, Queen Victoria, Charles Lefebvre, La Ville de St. Denis, Maurice Bernardin, and last, but not least, the beautifully-formed new yellow Tea Maréchal Neil, were among the most noticeable. Messrs. Paul & Son were second with a good stand, in which were Comtesse de Chabrillant, Madame Charles Wood, Madame Vidot, Général Jacqueminot, Maréchal Vaillant, Maurice Bernardin, Lord Clyde, Triomphe de Caen, and Pierre Notting, one of the best dark crimson in the Show. Mr. Keynes, of Salisbury, was third; Mr. Cant, Colchester, fourth; Mr. Cattell, Westerham, fifth.

In Class II., forty-eight varieties, three trusses, Messrs. Paul & Son were first, and second in the following class for twenty-four varieties, with beautiful stands, in which we particularly noticed Madame Caillat, Professor Koch, François Louvat, Lord Clyde, Lord Macaulay, Madame Vidot, Alba Roses, Madame William Paul, Madame C. Crapelet, Caroline de Sansal, and Louise Margottin, very beautiful and fine in form. In addition to the above, Messrs. Paul & Son also exhibited their new Rose Princess Mary of Cambridge. Mr. Turner was an excellent second in forty-eights, Mr. Keynes third, and Mr. Francis, of Hertford, fourth. For twenty-fours Mr. Keynes was first, having Gloire de Dijon, Louise Peyronny, Laurent Descourt, Comtesse de Chabrillant, and several others particularly good; Messrs. Paul and Son, as already stated, were second, Mr. Turner third, Mr. Cant fourth, and Mr. Mitchell fifth; the last-named had Isabella Gray, fine.

In Class IV., single truss of twenty-four varieties, Mr. Cranston, Hereford, was first with Louis XIV., Sénateur Vaisse, Olivier Delhomme, Comtesse de Chabrillant, Pauline Villot, &c. Mr. Turner was second with Gloire de Santenay, François Lacharme, Duc de Rohan, Queen Victoria, and Baron Gonella, very good. Mr. Treen, Rugby, was third, and Messrs. Paul & Son fourth, with good stands.

Class V., was for single trusses of twelve varieties, and here Mr. Turner was first, Mr. Francis second, Mr. Keynes third, and Mr. Cant fourth. In the different exhibitions were some excellent examples of Souvenir de la Malmaison, Victor Verdier, Madame Victor Verdier, La Reine, and Comte de Paris.

In the Amateurs' Classes were some excellent exhibitions, especially those from Mr. Hedge, the Rev. S. Reynolds Hole, and Mr. Ingle.

In Class VI., single truss of thirty-six varieties, Mr.

Hedge was first, Rev. S. R. Hole second, Mr. Ingle, gardener to Mr. Round, Colchester, third; Mr. Exell, gardener to J. Hollingworth, Esq., Maidstone, fourth; and Mr. Bristowe, gardener to G. Orme, Esq., fifth.

Class VII., twenty-four varieties, was also very good, especially the exhibitions coming from Mr. Ingle and the Rev. S. R. Hole, which had the first and second prizes; Mr. Smith, gardener to T. Monson, Esq., Leyton, was third; Mr. Hedge fourth; Mr. R. B. Postans, of Brentwood, fifth; and an extra prize was awarded to Mr. Hunt, Leicester.

In Class VIII., eighteen varieties, single truss of each, there were likewise several meritorious collections. Mr. Hedge again took the first place; Mr. Dennis, gardener to H. Hayward, Esq., Folkington, was second; Mr. Bristowe third; Mr. Chard fourth; extra Mr. King.

In Class IX., twelve varieties, Mr. Bristowe was first, Mr. W. Smith second, Mr. Ingle third, Mr. Postans fourth, and Mr. Hunt had an extra prize.

Of Roses in pots there were only three collections, two of which, in good condition considering the weather, came from Messrs. Paul & Son, who had a first prize for twenty-five in eight-inch pots, and a similar award for twelve sent out in 1864. Mr. Francis was second for a collection of twenty-five.

The day was delightful, and, as usual at the Rose Show, the crowd of visitors was so great that the tables could only be approached with great difficulty, and long and patient waiting; especially was this the case where the Nurserymen's collections of forty-eight and twenty-four were shown.

ROYAL HORTICULTURAL SOCIETY.

JUNE 24.

A FLORAL Decoration Show was held this day, prizes of the value of ten, seven, and three guineas being offered by Sir Wentworth Dilke, Bart., for the most tastefully decorated dinner-table laid out for twelve persons. The Judges were Lady Caroline Kerrison, Lady Margaret Chatteris, the Hon. Mrs. Rose, and Mrs. E. Bowring, assisted by Mr. J. E. Millais, R.A., Mr. Richard Thompson, and Mr. J. H. Pollen. The first prize was awarded to Messrs. W. & G. Phillips, 155, New Bond Street, for an arrangement in which Minton's china, of several beautiful designs, largely entered. The centre piece consisted of three female figures supporting a circular basket filled with Grapes and other fruit, resting on moss and Ferns; but the chief novelty lay in small glass tubes for holding water and flowers being supported all round, so as to form a festoon, by means of metal bands made to resemble tape. The two end pieces were also figures in Minton's china, forming elegant candelabra, with four branches, in which rose-coloured wax candles were set. Other end dishes were filled with fruit, and the whole was set round with baskets made of the same kind of china filled with fruit, flowers, and Ferns. A mirror at the base of the central figures supported a tripod glass stand of flowers. The frame was of metal, and perforated to admit flowers; and the plates which were set for the guests had three holes at the edge for holding water and flowers. The second prize was awarded to Mrs. Dalton, of Ealing, for a design consisting of Petunias, White Roses, Scarlet Geraniums, and Corn-Flowers crossing each other diagonally, and the centre a basket of fruit. The whole was very simple and permitted of the guests seeing each other and conversing, but the arrangement did not seem to us very pleasing. The third prize went to A. Chapman, Esq., 22, Norfolk Street, Park Lane, for an elaborate design, the principal pieces being of glass and set on a mirror. That in the centre had two dishes, the lower one filled with Delphiniums and Ferns, having also three flower-tubes springing from it; the upper one filled with Roses, Stephanotis flowers, and Ferns. At each end was a glass stand about 20 inches high, containing Grapes, Peaches, and other fruit, and two more at each side containing Aërides and other Orchids. The mirror was surrounded by the flowers of Stephanotis floribunda, and Roses with their foliage. Messrs. Dobson & Pearce, of St. James's Street, were highly commended for an exhibition in which what is called a Grecian tripod glass stand was very elegant and different from those generally employed; and a similar stand was employed by Mrs. Thompson, pendant

glass baskets being attached by a wire hook to the body of the stand. Mr. Naylor was commended for an arrangement consisting of a central circle in which the glass flower-stands were surrounded by spar and Ferns, and an outer circle for water and flowers. The whole was novel and rather pleasing.

The prizes offered to ladies by the proprietors of the *Gardeners' Chronicle* for plants grown in a room—viz., £10 for the best Orchid in bloom, and £10 for the best flowering or fine-foliaged plant, brought forth a good competition. Miss Williams, Sutton House, Highgate, took the first-named prize with a very good *Asides* affine; and Viscountess Doneraile had the other for a basket containing a fine plant of *Allocasia metallica*, *Gymnostachyum Verschaffeltii*, *Dracæna Cooperi*, and a *Caladium*. We noticed besides a good plant of *Lycopodium cæsius* from Mrs. McKenzie, Alexandra Park, a fine *Adiantum cuneatum* from Mrs. Dombrain, and some good *Oncidiums* and *Cypripediums*.

PRETTY CANADIAN WILD FLOWERS.

BEFORE the last patch of snow has melted from the hillside the beautiful little Mayflower (*Epigæa repens*), bursts its buds, and dots its dark glossy leaves with pretty pink flowers, as it creeps over the granite boulders, and peeps out here and there on the mossy banks. Then come the modest little Hepatica, the yellow Dog's-tooth Violet (*Erythronium americanum*), the Blood-root (*Sanguinaria canadensis*), used as a dye by the Indians, the purple Trillium (*T. erectum*), and the painted Trillium (*T. erythrocarpum*). In more open places, and by the roadside, may be found the Spring Beauty (*Claytonia virginiana*), whilst down on the sandy beach of the St. Lawrence is to be seen the elegant fairy Primrose (*Primula mistassinica*), a perfect little gem, pale lilac in colour, and so small that a plant in flower may be potted in a thimble.

A little later, and the woods are gay with the Star-Flower (*Trientalis americana*), the Bunchberry (*Cornus canadensis*), the Columbine (*Aquilegia canadensis*), the *Clintonia borealis*, with its rich glossy leaves and pale yellow flowers, the *Dicentra* (*D. canadensis*), and the *Corydalis* (*C. glauca*).

As the month of June advances the swamps contribute their share, and yield in profusion *Kalmia angustifolia*, and, still later, *K. latifolia*, Labrador Tea (*Ledum palustre*), *Rhodora canadensis*, Pitcher-plant (*Sarracenia purpurea*), Cranberry (*Vaccinium oxycoccus*), *Cypripedium acaule*, *Smilacina trifolia*, *Pogonia ophioglossoides*, *Calopogon pulchellus*, and several of the more common varieties of the Orchis.

In the woods we have the yellow Lady's Slipper (*Cypripedium pubescens*), one or two varieties of Wintergreen (*Pyrola*), the Prince's Pine (*Chimaphila umbellata*), and the beautiful *Linnaea borealis*, trailing so gracefully over the moss-covered logs.—(*American Gardener's Monthly*).

THE YORKSHIRE GALA.

WEDNESDAY and Thursday, the 14th and 15th of June, were the days fixed for the seventh year of the York Gala and Floral Fête, held in the grounds of the Bootham Asylum.

The show of plants and cut flowers has each year gone on improving, and this year the display of Pelargoniums, stove and greenhouse plants, and ornamental-foliaged plants was exceedingly good. One of the most interesting features of the Show were the collections of cut Roses, which were brought together by the additional prizes offered by the Committee this year, with the hope of inducing some of our principal Rose growers to compete; and although, owing to its being too early in the season, our northern Rose growers were not represented, yet the Committee have every reason to congratulate themselves on the exceedingly fine display of Roses shown, and all the space we can spare is for some notes on them, for, as is usually the case, when a good collection of cut Roses is exhibited, they proved the most attractive feature in the Show.

In Class 27, for forty-eight varieties, single blooms, Mr. Keynes, of Salisbury, was first; Mr. R. B. Cant, of Colchester, second; and Mr. E. P. Francis, Hertford, third. There were no other competitors. Mr. Keynes was *facile princeps*. The race between Mr. Cant and Mr. Francis was much closer, the number of good blooms in each tray being nearly

equal; but one or two inferior ones occurred in Mr. Francis's collection, which gave Mr. Cant the second place. Mr. Keynes's forty-eight were, to take them as they were staged, Madame Hector Jacquin; Madame Joseph Guyet, a good new Rose; Mdlle. Bonnaire, too small; Madame C. Joigneaux, too open; America; Maréchal Suchet, good; Alpaide de Rotalier, a very fine bloom; Sénateur Vaisse, good; Cloth of Gold, very good; Madame Pauline Villot; Comte de Nanteuil, good; H. Laurentius, moderate; La Ville de St. Denis; Olivier Delhomme, very good; Anna de Diesbach, too far gone; Madame C. Wood, very good; Baronne Gonella, good but a little sullied; Prince Camille de Rohan; Louis Van Houtte, new; Madame Vidot; Charles Lefebvre; La Tour de Crouy, an enormous Rose, but apparently not likely to open well in damp weather; Parmentier, moderate; Devonienais, splendid; Madame Victor Verdier; Vicomtesse Douglas, too loose; Général Jacqueminot; Caroline de Sansal; Maurice Bernardin; Sœur des Anges; Souvenir de C. Montault; Louise Peyronny Souvenir de Malmaison, too far gone; Madame Boll; Evêque de Nîmes, very fine; Madame Furtado; Louise Margottin, both very fine; Duchesse d'Orléans, too loose; Madame Boutin; Lord Macaulay, a splendid bloom; John Hopper, almost equally fine; these two Roses were superb, and prove that our French raisers will have to look well to their laurels, as Lord Macaulay is equal if not superior to any French Rose in that class; François Lacharme, good; La Fontaine, too loose; Madame Vigneron; Maréchal Vaillant, too small. There were two or three others whose names we forgot. On the whole the collection was first-rate, though, as the blooms were fully expanded when they were first staged, the heat of the tent soon caused some of them to open too much.

Mr. Cant was second. Among his blooms we noticed some very good specimens of Souvenir d'Elise (Tea), Madame Hector Jacquin, Prince Camille de Rohan, Colonel de Rougemont, rather too light; François Lacharme, Mathurin Regnier, Comtesse de Kergolay, Evêque de Nîmes, Princess Marie, Keane, Elise Sauvage, very good in colour; Eugène Appert, President (Tea). We especially noticed that all the Tea Roses in Mr. Cant's collection were good. Madame C. Wood, Madame Caillat, Gloire de Châtillon, and Vicomte Vigier were hardly up to the mark. We remarked a curiously striped bloom of Comtesse Cecile de Chabillant in Mr. Cant's collection, which is no improvement.

Mr. Francis was third with exceedingly good blooms of Anna de Diesbach; Louise Peyronny; Cloth of Gold; Louise Margottin; Isabella Grey; Joseph Fiala, rather small. There were also good blooms of Pauline Lanzezeur; Smith's Yellow; Anguste Mié; Eugène Appert, rather faded but of good form; Gloire de Dijon, curiously marked with pink from the sun. General Washington, Charles Lefebvre, Caroline de Sansal, Madame Furtado, Victor Verdier, Marie Portemer were none of them up to the mark.

In thirty-sixes, Mr. Keynes was again first; Mr. Treen, of Rugby, second; and Mr. Cant, third. In Mr. Keynes' collection were some splendid blooms of Baronne A. de Rothschild, the best we have seen of it yet; Charles Lefebvre; Alpaide de Rotalier, a great acquisition, a clear satiny pink with fine form and smooth petals; Lord Macaulay; Madame Boutin. Gustave Rousseau, a good Rose, but rather too loose in form, and thin, John Hopper, Triomphe des Rennes, and Comtesse Ouvaroff, were also very good, Madame Clemence Joigneaux was too far gone, it wants to be shown before it is fully expanded; Madame C. Wood and Beauty of Waltham, both very good, but too much alike; Rev. H. Dombrain, a good new Rose, somewhat like Catherine Guillot. Among the light Roses in this collection, Sœur des Anges, Madame Vidot, and Madame Vigneron, were all good, but none of the blooms of Sœur des Anges in any of the stands was as good as it ought to be. There were some good blooms in Mr. Treen's collection, who was second for thirty-sixes, but they were badly named and not judiciously staged. Jean Goujon appeared as Jan Jougon; Caroline de Sansal, was called Catherine de Sansal, &c. We should advise Mr. Treen to take more pains both in staging and nomenclature. Mr. Cant was third in this class, but we did not remark any blooms which were not shown in his forty-eights, which were a superior collection.

In Class 32, a prize of £5, given by W. Dove, Esq., Crown

Cottage, York, for twenty-four distinct varieties, in trusses of three with foliage and buds, there were three competitors, and the first place was again easily obtained to Mr. Keynes. Amongst these were some splendid blooms of Comtesse Oubaroff; Gloire de Vitry, Madame Knorr, Madame Charles Wood, Comtesse de Chabillant, Souvenir d'un Ami, Victor Verdier, and John Hopper. The only decidedly bad blooms were La Fontaine, all three of which were loose and open.

We have not much space to accord to the amateur classes. There were many competitors for sixes and twelves; Mr. Evans's twelve being very good. In eighteens, the competition was not so close. Mr. Perry was first with good blooms of Charles Lefebvre, Paul Ricaut, Jean Goujon, John Hopper, Madame Boll, and Senatore Vaisse. As a general rule we may remark, that the Roses in the amateur classes were not shown sufficiently fully expanded; for though many Roses are prettiest when half opened, yet in an exhibition of Roses we are of opinion that those which keep their form and shape when fully opened will always bear off the palm against mere buds, and it ought to be the object of Rose growers to select those which are best when fully expanded, and which are more likely to prove of general service in our flower gardens.

There were four classes for Roses in pots, but none that were very worthy of remark, as the hot weather had been too forcing, and the colour of the Roses was not good; a plant of Charles Lawson was the best.

We have not space at present to particularise the other features of the Show, but we cannot pass over the splendid collection of Pelargoniums shown by Mr. May, of Bedale, who easily distanced all competitors. Amongst the Fancies were splendid plants of Exquisite, Madame S. Dolby, and Countess of Waldegrave. His twelve English Pelargoniums were—Ariel, Lord Clyde, Viola, Rose Celestial, Gem of Roses, Saracen, Desdemona, Admirable, The Bride, Leander, The Belle, and Sir Colin Campbell, which were all equally good. Mr. Steward also showed six first-rate plants in the amateur class—Leviathan, a very large flower; Desdemona, Rose Celestial, Lucifer, Majestic, and Viola. The Hon. Payan Dawney also showed some fine plants of Fancies, among which were Celestial, very good, Sweet Lucy, Cassandra, Cloth of Gold, &c.

We noticed an error in judgment in the class for six Fuchsias. Those which obtained the second prize were not named, and in them were two plants of Souvenir de Chiswick, and two of Venus de Medici. In first-class shows we should be inclined to disqualify all plants which were not named, as it is very easy in a large collection for two plants of the same sort to be shown, and yet pass the judge's eye. In the same tent were collections of twelve Geraniums for bedding purposes, eight of which were to be variegated. These were not shown at all up to the mark; and we should be inclined to limit the size of the pots, as some were shown in small pots and others in very large, in some cases the plants not being nearly large enough to cover the pots. There were also prizes offered for collections of twenty bedding plants, excluding Geraniums. The first prize was awarded to the largest plants, but there were some inferior plants, amongst them a white seedling Petunia, and a pot of variegated Sage, being each equally poor; the collection which was placed second was more compact and more like bedding plants. There was nothing very novel in any of the collections unless we except Iresine Herbstii, or Achyranthes Verschaffeltii, which promises to be an acquisition. We must not pass over in this tent some blooms of Pansies exhibited by Mr. Dean, of Bradford Nursery, near Shipley, amongst which were Mrs. R. Dean, raised, we believe, by Downie, Laird, & Co., which is a great acquisition. Amongst the Fancies, were Princess of Wales, very good; Prince of Wales, a very handsome bronze and yellow with dense blotch; Amy Hogg; and Princess Alice, which still keeps its position amongst the Belgian Pansies.

We cannot conclude without a few remarks on the splendid collections of stove and greenhouse plants shown by Mr. Micholls, gardener to Mr. Baines, of Summerfield House, Bowden, Cheshire. He was placed first both for twelve stove and greenhouse plants in bloom, and for ornamental-foliaged plants, amongst which there were some good specimens of *Maetochilus*, *Sarracenia flava* and *purpurea*; and two very handsome *Crotons*, especially the *Croton variegata* large

folia. Amongst his collections of plants in bloom were two very fine Azaleas, *Gledstanesi* and another; three *Lorax*, *coccinea*, *javanica*, and *aurantiaca*, all in splendid bloom. We also noticed *Phenocoma prolifera*, and *Acrophyllum venosum*. A very fine collection of six stove and greenhouse plants was exhibited by Mr. Davidson, gardener to G. J. Yarborough, Esq., of Heslington; they were *Rhynchospermum jasminoides*, well bloomed; *Allamanda Schottii*, *Erica ventricosa*, *Polygala Dalmaisiana*, *Stephanotis floribunda*, and *Medinilla magnifica*. A very fine plant of *Clerodendron Thomsoni* was shown by J. R. Pease, Esq., Haalewood House, Hull, the contrast of its scarlet flowers and white calyx producing a very pleasing effect.

We may congratulate the Society on the excellence of the Show and the general arrangements of the tents. The weather, too, was all that could be desired. We shall hope another year to see a better competition for bedding Geraniums and bedding plants, as these classes were introduced into the schedule for the first time this year; and we should be inclined not to limit the numbers to eight or more variegated, but to leave it to the option of the exhibitors to send what proportion of bedding Geraniums, whether plain-leaved or variegated, they thought fit.

VISITS TO GARDENS PUBLIC AND PRIVATE.

J. F. LOMBARD'S, ESQ., SOUTHSIDE, RATEGAR, DUBLIN.

THERE are some words and places which bring with them so many associations, that no matter how interesting may be the objects which at present surround them, they are lost in the far deeper interest of the past; and so, although I stood in a garden where there was much to greatly please me, yet I could hardly for a moment forget the scenes which its situation on the banks of the Dodder called up to my memory. How little do we appreciate the dream character of our life! nor until years begin to tell on one to see how vain are all its pursuits, how unstable the friendships we form, how changing the character of our own thoughts and feelings, how much the "I" of forty-five differs from the "I" of twenty. How well if that difference be all in the right direction, and we be given to be more anxious for the "home beyond!"

Well, I must not sermonise, but write a few lines about Mr. Lombard's garden. Mr. Lombard is known to many in England as one of the most successful growers that Ireland possesses of the Gladiolus and the Rose; and as these two flowers are favourites of mine, I was anxious to see how they were grown, and whether their appearance justified auguries of success again.

The situation of Mr. Lombard's garden reminds me not a little of that of Mr. Radclyffe's at Rushton—on a bank facing the south-west, although the advantage as far as soil, climate, and shelter, is decidedly on the side of Mr. Lombard's. This similarity has led Mr. Lombard, perhaps, to derive so much profit from Mr. Radclyffe's disquisitions on the Rose. At the bottom of his garden there is a fine stream of water, so that, as the Yankees say, he has great water-privileges. The garden itself is an old-fashioned one, laid out in great part in those small, square, box-enclosed beds which were once so popular, and which at one time doubtless contained many of those fine, much-loved, herbaceous plants, so long neglected, but for which there is now a revived taste. At present these are filled with dwarf Roses; and the number of plants of the queen of flowers dispersed throughout the garden is upwards of two thousand. Mr. Lombard grows each variety as standards and half-standards on the brier, budded dwarf on the *Manetti*, and on its own roots. He has thus an opportunity of testing it in every way, and to decide as to how to grow it for a permanency. He is, like most rosarians, a great lover of the *Manetti*. It would be useless to cruminate the kinds which he considered the best, for they are the same which we esteem on this side of the Channel.

In Gladioli Mr. Lombard's garden is very strong. His choice beds contain about four hundred roots, and in these he had not had above seven misses, showing that the notion that there is a difficulty in growing and saving the bulbs of this fine flower is a nightmare. (I may mention, too, that

in my own garden I have planted upwards of three hundred bulbs, and that I have not in a bed of 250 roots more than three misses, and the roots are to a great extent my own saving. Mr. Lombard's collection comprises the best of English and French varieties, and some good seedlings of his own. Of the new ones of this year he has four or five roots of each; and as he is a friend of Mr. Standish's he has also some of his finest and choicest varieties. He quite agrees with the notion which I have maintained about the *Gladiolus*—that no bulb takes stronger feeding than it does. He not only thoroughly manures his beds, but also gives them a good deal of liquid manure. Living as he does close to the Dodder, he obtains some of the drift sand which the floods wash down and leave just in front of his garden, and mixes this with the soil; but I am persuaded that if the soil be light and rich this is not necessary. As in every other flower, we can lay down no positive rules for every garden, but every cultivator must decide upon his own requirements. Let me advise every one, however, who is growing them this year to give them a liberal supply of water. I should be myself chary of liquid manure this very hot weather, but should give copious waterings every day when the plants are showing for bloom. Mr. Lombard provides against their being blown about by placing stakes at intervals in the beds, and then twisting list (the edgings of cloth and flannel), in and out amongst the plants, so as to enclose each stem in a loop. This is done at three separate heights, and so prevents them from being blown about, and the stalk from being broken. Shading he never resorts to, and indeed few flowers need it less than the *Gladiolus*, as it stands the weather very well, and shading to a great extent takes the colour away. As to varieties, he spoke favourably of the following seedlings of Mr. Standish:—Samuel Weymouth, Sir Walter Scott, *Carminata*, Eleanor Norman, The Colonel, Mrs. E. Nott, Basil, Lucy Neal, and Ensign. And of Souchet's, amongst older flowers *Achille*, Napoleon III., Ophir, Princess Clothilde, Linné, Pline, Comte de Morny, were pronounced good; while John Waterer, Princess of Wales, Flora, and *Impératrice Eugénie* were considered amongst the best of the newer varieties. With regard to what are called "winged" flowers, when the *oppositiflorus* blood is more strongly present, he said a good deal may be done to bring them more to a face by pressing the flowers together when they are just showing bloom; but at the same time he agreed with me that the time must come when winged flowers must be dispensed with.

The fruit trees in Mr. Lombard's garden were in fine order. Cox's Orange Pippin was largely planted, and considered by him to be the best Apple grown. That fine Apple, the Irish Peach, was also considered well deserving of cultivation. It is indeed a most delicious Apple, little known in England, but when eaten from the tree nothing can be finer. One *Beurré Diel* in a corner of the garden was a match for Mr. Madelyff's Peach trees. It had borne last year as many as 400 fruit, and after keeping 150 for his own use, the residue had been sold for £3 10s., and this year the crop is again full. Mr. Lombard has also some nice Conifers; and in an old greenhouse, which is now to give way to a larger one, there were some fine pans of seedling *Gladioli*, saved from the best flowers carefully impregnated, from which he expects great things.

Altogether I enjoyed, as only a florist can enjoy, the sight of many things that showed Mr. Lombard to be an excellent and enthusiastic grower; and he is, moreover, a genial and hospitable amateur. On some points we were wide as the poles asunder; but this did not prevent our having a pleasant and agreeable chat, and of, I believe and hope, mutually enjoying one another's society.—D., Deal.

GREAT CONTINENTAL ROSE SHOW.—On the 9th of July, there will be held at Brie Comte Robert (Seine et Marne), a Rose Show on a scale far surpassing anything we are accustomed to see in this country. Brie Comte Robert is the great centre of Rose rearing and Rose culture in France, and English nurserymen and amateurs may not be aware, that from this district the Paris nurserymen draw their supplies. When we state that the growers have an extent of somewhere about a million and a half of Roses to cut from, we may form some conception of the extent of the exhibition.

MY PLANTS,

AND HOW AND WHERE I FOUND THEM.—No. 6.

I ASSURE you I felt "everlastin' sorry" I ever quitted our pretty home in the old country village, with its kindly faces always ready to give us a greeting, for the uncertain welcome we might receive amongst strangers. However, "it's a long lane which has no turning," and ditto a voyage which has no end. Morning dawned at last, certainly cold and grey the dull light stole over us, but still sad, indeed, must be the heart to which hope comes not with returning light. There was less straining and creaking of the good ship's planks, less booming of the angry waves, and a feeling of security began to circulate amongst us. Totally regardless of my companions or children, and thoroughly exhausted in mind and body, I fell into a busy and unrefreshing slumber, from which I was soon awakened by the joyful news that we were within sight of the town of St. Helier's. In consequence of the severity of the weather, the steamer was unable to enter the harbour, and we were landed at the pier in boats, amidst the congratulations and cheers of the crowd which had collected to welcome the overdue mail.

Solacing ourselves, after the English fashion, with a good dinner at the hotel, my husband left me to rest awhile, whilst he perambulated the town and neighbouring fort. I must not, I suppose, in a publication devoted to botany, give any further details with regard to the religion, manners, or customs of the islanders, or of their civil and military history, all very interesting topics to lovers of history, and of the past. I may, however, be allowed to speak cursorily of the soil, fertility, and natural productions of the country. The former is generally composed of a light, sandy, yet highly productive earth. Scarcely a specimen of limestone or chalk has been found in the island. This makes good the rule, that "nothing of a calcareous nature has ever been discovered there." In fact, the whole island is a mass of stone, the higher parts of which are but thinly covered with sand, and the *débris* of rock, which are driven over the tops of the highest cliffs by the strong gales from the sea. The valleys have many feet of vegetative earth, and are extremely fertile, and we were much struck in the early part of the summer by the pretty streamlets which trickled down from between the fissures in the rocks, and gladdened the flowers and Ferns beneath them; during the hotter months these fertile sources failed. The chief anxiety of the farmer in the spring seemed to be the cultivation and securing in its perfection the early Potatoes, for the supply of the London markets. The sides, or *côteaux*, as they are called, of the hills present quite a gay and holiday appearance during the Potato harvest, if I may so term it, for something after the fashion of the American "bees," do these island families help each other in a press of work—unlike our American neighbours, however, in one point, which is, that whilst "brother Jonathan" works first and plays afterwards, the Jerseyman will have his bottle of spirit at hand, and often so frequent are the visits to this all-powerful medium, that his own spirits are raised to the most hilarious pitch; and frequently the finale is a fight between these well-meaning friends, and as a natural sequence, a finale also to the day's work, perhaps quite early in the afternoon. These *côteaux* also yield "timber, Broom, Gorse, Fern, and where neither too steep nor too rocky, tolerable pasture."

Very little corn is grown in Jersey, as it can be brought from the foreign markets cheaper than the inhabitants could grow it themselves. The soil will, however, produce all the farinaceous kinds of grain. Many hogsheds of cider are annually manufactured in the island, and at the end of the spring, when the orchards are a mass of blossom, a drive through the numerous roads and lanes which intersect each other in all directions, is a treat which all lovers of the picturesque might envy. I remember during our residence with a French family in the parish of Trinity, we often had a delicacy placed upon our tea-table by Madame our hostess, called "black butter," it was a kind of black preserve, of peculiar flavour. I was informed by the loquacious donor that it was a concoction made of Normandy Pippins, butter, and I suppose sugar. I propose at some not far distant time to obtain the receipt for this same dubious-looking, yet pleasant mess. Whilst speaking of the tea-table and

its adjuncts, I may mention that Jersey was famed in years gone by for its honey. Amongst the farmers, also, the favourite drink was mead. Now, the apiaries are much fewer in number, but I should imagine from the mildness of the climate, and the great variety of herbs which are found on all sides, that the bee-keeper might realise a very good profit from his busy little family. Clover with its deliciously-scented blossoms, and Lucern, are cultivated to some extent, and would, no doubt, help to fill the combs of the colony of workers.

Whilst residing in the parishes of St. Helier's and Trinity, we did very little in the botanising line, for it was too early in the year, and besides that we did not yet know the island sufficiently well to be able to economise our time; but subsequently after locating ourselves in St. Saviour's, we spent the months of May and June in the most enjoyable rambles possible. Our plan of action was to pack up a basket of provisions directly after an early breakfast, not omitting an interesting book of some kind, and off we started, either for a day's stroll amongst the woods, and through the innumerable roads with which the island abounds, and which are lined with over-shadowing trees, the bank's sides being covered with the pretty Irish Yew; or we turned our steps towards the sea coast, generally selecting the northern side of the island, encamping at Bouley Bay, Rozel Bay, or Grève de Lecq; the latter place is rich in marine Grasses, and the scenery charming. Here are caves quite as worthy of notice as the far-famed caverns of Plemont and La Maye, one is perforated, and extends in length about 100 feet. It is, in fact, a subterranean passage, which cannot be explored when the tide is up. Another, "which lies under a hill on the western side of the bay, the mouth of which is an opening nearly 20 feet in height, rises from the entrance to a considerable degree of elevation, and penetrates horizontally to the depth of 50 or 60 feet." When illumined by the rays of the sun, and looking outwards from the extreme depth, it conveys the idea of a church, with a lofty vaulted roof. It was in the sands close to this spot that I came upon the *Elymus arenarius*, Upright Sea Lyme Grass; the *Triticum loliaeum*, Dwarf Sea Wheat Grass; and the *Rottboellia*. I thought this latter one of the stiffest-looking Grasses I had ever seen, there is something so quaint and old-fashioned about it. What the connection of ideas in my mind can be, I know not, but in thinking of it, I think, too, of Eliza Cook's poem, "The Old Arm Chair." Certainly there is no intimate connection between a grass and a chair; but I picture the "old arm chair" as a thing of stiff and formal design, with plenty of corners for the children to break their noses upon, and the *Rottboellia* with its formal name and appearance, is put in the category of my ill-regulated mind as akin to the antiquated piece of furniture aforesaid.—ALICE.

CUTTING ASPARAGUS.

I HAVE always thought that the practice of keeping Asparagus continually cut, whether fit for table or not, was erroneous; but my attention has lately been called to a remarkably good plantation that has been managed for years upon that plan. Every bit of it is cut as soon as it shows above the surface, whether wanted for table or not, until cutting for table is given up, when it is allowed to grow away. The plantation is very thick indeed, and, I am informed, produces very excellent Asparagus for table. One of the beds is rested every year, and as there are nine beds in the plantation, each bed is rested in turn, but every ninth year. Now, as the superior quality of the "grass" is attributed to the system of keeping it all clean cut off, I wish to inquire if such a practice is sound in theory? If so, how is the Asparagus an exception to the general rule or principle, that the continual cutting down of any plant weakens its energies, and if the practice is continued beyond a certain limit will eventually kill it?—J. K.

[The whole subject is an interesting one, but it pretty well comes under the same rule of circumstances as the cutting off and the saving of the old leaves of Strawberry plants. In fine, light Asparagus ground we would cut more and cut longer, than in stiff, heavy land. There can be no doubt that continuous and complete cutting would eventually kill the Asparagus just as it would Rhubarb, and

as we have proved, will kill the worst of all weed roots, the white Bindweed. In practice, if we could manage it, we would prefer not to cut a bed of Asparagus that we intended to take up and force, because in such a case the buds would be sooner matured, and the whole plant placed in a state of rest sooner, so as to be aroused into fresh energy more easily. Unless for such a purpose, we see little use in the rest every ninth year. From forcing and rotation cropping ours seldom attain any such age, though when well established and properly treated with manure, &c., there need be no reasonable limit to the productive power of a bed. In cold, stiff soils, it would be advisable to cut all at first, and then allow the weaker to grow, to make sure of buds ripening for next season, even though there should not be too many of them; but in light, rich land, in which the Asparagus delights, it will often be the best plan to cut all that comes regularly, until Peas begin to come in. If you leave the weaker as you cut the stronger, the shoots left will take the running of the plant, and finer buds will be formed than if you had a greater number of shoots. If in such favourable circumstances you cut all, the plant is stimulated to throw up a mass of shoots, and though these may be rather small at first, they will gather strength and firmness, and form at their base a whole army of buds for next season. If the beds were all cut far into the season, the shoots would be so small and ill-ripened, that the buds would be deficient in organic matter, and if the process were continued the produce every year would deteriorate more and more. The cut-all principle if not continued too long, we have no doubt answers well in the light rich ground about Fulham and Battersea, but the cutting must not be continued so long, in cold, stiff soils, because the plants cannot produce fresh shoots and ripen them so quickly. In the latter circumstances it will always be good policy to let the Asparagus grow as soon as Peas can be obtained. What say our coadjutors?]

CACTUS CULTURE.

THIS tribe, to be grown in great perfection, requires moisture and dryness. The point is to give each as it is most needed. We used at one time to grow a rather large collection of these succulents, and we feel inclined to take to them again if we have a chance. Many of us find it necessary to vary the plants of which we make a hobby for a time; and we used to go on with the Cactus and *Cereus* tribe, until those most interested became tired of their gaudy colours. The greater part of them originally (for there are now beautiful hybrids), came from South Africa, where they are found in abundance festooning rocks and other dry places, their roots penetrating into the interstices of the rocks, and their succulent stems pretty well reduced to a mummy state by the intense heat of a cloudless sun and an arid atmosphere. A period of downpouring rain succeeds, and the roots and stems absorb the moisture, so that the stems become succulent with juice instead of being like thongs of dried leather. Then follows another drying period, in which the stems are again deprived of their moisture, and what is technically called ripened—that is, the growth made becomes indurated. When the moist season comes again the stems swell and are covered at every angle with the beautiful flowers. Now to thoroughly succeed we must take a lesson from Nature, and give to this succulent tribe a period of rest and a period of growth. One great drawback is that at no time have we the command of the sun of South Africa, and to make matters still worse we are forced to use our summer chiefly for excitement and growth, and our dark winters chiefly as the season of rest. When the best results are to be aimed at, the plants must be matured and partly rested under the bright sun of autumn, and then they will bristle with flower-buds, when we either force them with moisture and heat in early spring, or allow them to come more naturally in early summer. By acting on this system some farmers' daughters have bloomed them in such perfection as to tell me they thought they now could rival their instructor. They even succeeded admirably with *Cereus speciosissimus*, a rough-looking species, and its spines very dangerous for some hands. If you succeed with that none need beat you.

Now, let us go into a few details of practice, all based on the facts alluded to above. Here is a nice little plant green and flourishing, but the stems are rather too flabby, and lead you to suppose it has had too much moisture. The drainage, therefore, is examined, a quantity of the old soil taken away, and a nice clean pot given. No plants are more careless of soil. Sandy loam, loam and peat, loam and lime rubbish will grow them admirably, but my preference is to compost would be equal parts of sandy loam, brick rubbish, and old, sweet, dried cowdung. After potting—say in June, water and give all the sun you can to the plant, keeping it inside of the house or window. Water on till August whenever the plant wants it, as you would do a *Geranium*, not watering when the plant does not require it, nor yet allowing the stems to shrivel or shrink in the least. If the autumn is bright and sunny place the plants outside the window by the middle of August, or in front of a fence or wall facing the south. Keep giving a little water until the middle of September, but a skiff over the stems will be better than much at the roots. From the middle of September I would give all the sun possible, and not a drop of water unless the plants showed signs of distress, and then I would damp the stems instead of the roots. By the middle of October the plants should be placed in-doors, and if the temperature ranges only during winter from 38° to 45°, they will rarely need any water all the winter. The atmosphere at that temperature will supply them with enough of moisture. When you wish them to grow and bloom syringe the stems, give them a rise in temperature, and as soon as there is the appearance of a pin-head of bloom, give a little water to the roots, increasing the quantity gradually as the buds swell. After flowering again follow the above process and success will be obtained.

Considering their beauty and the very little trouble they give, these succulents deserve to be extensively cultivated by those who have little time to spare, and who from their avocations cannot give that regular attention which most other plants require. Let the above leading principles be kept in view, and extra heat, and extra cold, provided there is no frost, and a little excess of moisture or of dryness now and then, will never injure these beautiful and accommodat-ing succulents.—R. FISH.

THE PLEASURE GROUNDS OF PARIS.

(Concluded from page 384.)

RETURNING now to the entrance at the end of the Avenue de l'Impératrice, and following the road which lies before us, we arrive in ten or twelve minutes at the extremity of Lake Inferior, which here presents a dazzling perspective. This extensive sheet of water, covering an area of 14 acres, is 1272 yards long, 113 wide, and from 3 to 6 feet deep. Above its surface rise two small islands of which the united area is about 6½ acres; the larger, to the north, containing 3a. 3r. 12p. and being 457 yards in length; and the smaller, to the south, is 366 yards long. These two islands are united by a rustic bridge, which in summer is covered with various climbing plants, and harmonises well with the chalet or Swiss cottage which stands close by under the shade of a clump of old Pine trees, which cover the upper part of the larger island. The chalet is a sort of tavern, comprising a small theatre, in which are acted some minor pieces during the summer months.

Lake Superior is divided by a road under which the water passes, as required, through several rocky passages into the deep and sinuous end of the lower lake. The upper lake has a surface of nearly 4 acres; length, 455 yards; mean width, 60 yards; and depth, from 3 to 5 feet. In 1855, 50,000 young salmon and trout artificially hatched were put into the lakes; but most if not all have since died from the want of current. The water for the lakes is taken in part from the Seine, by means of force pumps placed at the Quai de la Conférence, and in part supplied by the artesian well lately opened near the Grille de la Muette, where the water, after rising 1600 or 1700 feet, gives a temperature of 37° or 38° Fahr. The water enters at the Grille de la Muette, and is conducted to the Butte de Montmartre, where it enters the southern extremity of Lake Superior, forming a cascade.

The Butte de Montmartre is an artificial elevation which has been formed with the earth obtained by the excavation of the lakes and rivulets; it is the highest point in the Bois de Boulogne, being from 32 to 40 feet above the surface of the lakes. From here we gain glimpses of the heights of Issy, Meudon, Bellevue, Saint Cloud, Suresnes, and Mont Valerien. The full view of this magnificent and picturesque landscape has been intentionally shut out by clumps of the old wood, which are here rather too artificially arranged. The slope from here to the Porte Boulogne is very bare, the walks so superbly constructed everywhere else being here very diminutive, and the trees are too far from the edges. Even the grass here is coarse and ill kept, and the various beauties of the lakes are indistinctly seen; but these slight defects are very likely soon to be removed, and are well compensated for by about twenty minutes' walk to the grand cascade; and the road we shall select, although a little tedious, is certainly the most interesting. On descending the magnificent walk which follows the lakes, a full view is obtained of the lakes and islands, every step presenting some new beauties. We arrive in a few minutes between the lakes—this chosen spot around which all the luxurious grandeur of the place lies profusely spread. The slopes are here often abrupt, sinuous, and undulated, but covered to the water's brink with a verdant carpet of well-kept grass, planted here and there with clumps of the finest *Coniferae*, shrubs, and in summer with isolated plants, such as *Aralia papyrifera*, *Caladium esculentum* and *odoratum*, *Ficus elastica*, *Musa rosacea*, *Wigandia urens*, *Gunnera scabra*, *Erythrina*, *Nicotiana wigandioides*, *Bambusa aurea* and *metake* &c.

There are some specimens of *Araucaria imbricata*, *Wellingtonia gigantea*, *Taxodium distichum*, *Dacrydium cupressinum*, *Cedrus deodara*, *Abies Douglasii*, and *Abies pinsapo*; but *Coniferae* do not grow so well here as in England.

There is a small walk forming a kind of edging around the lower lake and its islands, leaving a small margin of grass between it and the water, where stand some fine examples of *Gynerium argenteum*, *Weigela rosea*, *Fraxinus pendula*, *F. ornus*, and *Salix babylonica*, with the beautiful *Daubentonia magnifica*. Among these run numerous walks, leading to bowers, and mounds, and little valleys, now kissing the clear waters where close by grows the Pampas Grass, in the shadow of whose plumes rests leisurely the heron or duck, and again rising gradually to rockwork clad lightly with Ivy. On the water everything is gay and living; thousands of beautiful-feathered birds skim to and fro, prattling their different languages, while the swan, more conscious of his beauty, may be seen arranging his white plumage in the mirror of the water.

On arriving at the northern extremity of the lakes, where the water is on a level with the surrounding banks, but is kept from overflowing by a shallow outlet allowing the surplus to fall gently into the mouth of a rivulet already mentioned, this divides into three—the two minor ones to the right go, one towards the Jardin d'Acclimation, the other towards Madrid; and the third, the longest and most winding, we shall accompany till we arrive at the Grand Cascade of Longchamps, where it tumbles about 20 feet over a large semicircular surface of projecting blocks of half-decomposed limestone, which have been brought here from the Forest of Fontainebleau. Underneath the falls is a cavern, on the roof of which may be seen some examples of fantastic stalactites. This water is received in a large basin which furnishes the numerous little rivulets and lakes which spread over the plains below.

The plains of Longchamps have been purchased by the city, and were annexed to the Bois de Boulogne in 1854; there 200,000 trees and shrubs have been planted in isolated clumps, so as to harmonise with the surrounding landscape. A portion of these plains is set apart as a race-course and for holding reviews. Returning to the summit of the rock, which forms a sort of arch above the water, we behold these verdant plains stretching down to the Seine, while beyond are the hamlets of Suresnes, Saint Cloud, and Neuilly; a little to the left may be seen the old town of Boulogne; while close by to the right, on the main road to Suresnes, may be seen the habitation of the Prefect, standing on the ancient ruins, and close to the tower of the famous Abbey of Longchamps, which was established by Isabelle of France.

Bois de Boulogne is laid out with that rare taste and

judgment which understands how to unite nature with art, without leaving them in disputation as to their respective rights—walls conducting us to shady wilds, or glades opening to receive the bright radiance of the sunshine; vistas terminating in indistinct grandeur; lakes, rivulets, and cascades, either in motion or repose; sunny slopes and happy valleys, the fit homes of contentment and pleasure.—**WILLIAM KELLY.**—(*Irish Farmer's Gazette.*)

ENTOMOLOGICAL SOCIETY.

THE June meeting of the Entomological Society was held on the 5th inst., F. P. Pascoe, Esq., F.L.S., President, in the chair. An unusual number of new members and associates were elected. Amongst the donations made to the Society since the last meeting were the publications of the Royal and Zoological Societies, and the Entomological Society of France, also a Memoir addressed to the Trustees of the British Museum on the disgraceful state of the entomological collection in the national Museum, in consequence of the insufficiency in the numbers of persons employed in the entomological department, by "Philocosmos;" also a remarkable Memoir by Dr. Sichel, of Paris, on the varieties of *Bombus montanus*, a species of Humble Bee, in which the author considered that a number of species, hitherto regarded as quite distinct, were only local varieties of one inconstant species.

The Rev. Hamlet Clark read a passage on the luminosity of the Firefly in Brazil, quoted by Gosse from Southey's "Madoc," in which the simultaneous emission of the light by great numbers of these insects was recorded. He also read descriptions of twenty-eight new species of plant-eating Beetles from West Australia, sixteen of which belonged to the genus *Paropsis*. He also distributed a number of specimens of a new and remarkable Coleopterous insect, collected by Captain Bowker in British Kaffraria, allied to the genus *Macronychus*, and which was found very numerous in the neighbourhood of the Sunn River, whirling about in the sunshine over the edge of a fall of the river, hovering and making sudden dives through the fallen water, and fastening themselves to the face of the rock.

Letters were read from Mr. Edwin Beed, who is engaged in an entomological excursion in the neighbourhood of Bahia, and from Mr. Brewer at St. Michael's, Azores, who is also engaged in an entomological voyage.

Mr. Smith exhibited a specimen of the very rare Beetle, *Apathe capucinus*, taken by his son in Bishop's Wood, Hampstead, running over felled oak timber. The capture of other specimens by the Rev. F. W. Hope, Longmynde Forest, Shropshire; and by Sir T. Pasley, in Pembroke Dockyard, were mentioned.

Mr. F. Bond exhibited a specimen of the rare Moth, *Dianthæcia albimacula*, captured last year, near Gosport, in June; also, a specimen of the fine North American Bombyx *Polypheumus*, reared in this country from the cocoon, of which a very fine large Ichneumon, of the genus *Ophion*, had been reared.

Mr. Stainton exhibited several curious cocoons from Mentone on the banks of the Mediterranean, chiefly found on *Quercus Ilex*.

The President exhibited a species of the genus *Dorcadron*, from Alicante, supposed to be new.

Mr. Moore read a paper containing descriptions of various new species of Bombycidae or Silk Moths from India.

Professor Westwood mentioned an interesting mode of preserving caterpillars of exotic Lepidoptera by pressure, as exemplified by various specimens in the Burchell collection, recently presented to the University of Oxford.

An animated conversation took place with reference to the meeting recently held at the South Kensington Museum for the disposal of the iron-covered buildings for local museums; when it was generally admitted that it was desirable to establish museums in various parts of the metropolis. The death of M. Leon Dufour, the father of entomology in France, was announced.

A paper by Mr. Smith was read in opposition to the views of Dr. Sichel as to the varieties of *Bombus montanus*; and Professor Westwood made some observations on the life history of members of the hive Bees recently observed,

and on the vast quantities of female Wasps occurring during the past spring, notwithstanding the destruction of great numbers of Wasp nests last season, by a disease similar to that of "foul brood" in the hive.

STRAWBERRY LORD CLYDE.

IN Belgian catalogues I notice that, according to Mr. Radclyffe's opinion, the new Strawberry Lord Clyde is the most valuable of all existing kinds. How does it happen that Mr. Radclyffe does not mention this fact in his last article, page 461, of this paper? Or has it, perhaps, come to "nil?"—**FRAGARIAN.**

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE principal crops here will now require attention in weeding, hoeing, thinning, and watering in dry weather. *Broccoli*, where the Cape-varieties have been sown in drills thin them out to one plant at every 2 feet, and immediately afterwards water those left. As soon as the weather will permit plant out the main spring crops. *Carrots*, a little more seed may be sown; to produce a later crop for drawing young. Loosen the earth between the main crops where it is baked hard. *Cauliflowers*, some of the late sowing should be planted as soon as the weather will permit, or if the planting of them can be no longer postponed, they must be watered until they make fresh roots. *Celery*, no culinary vegetable demands larger supplies of water at this season, the first crop runs to seed in a short time if not kept moist, and the late ones will be very much checked for want of it; the earth should be stirred about the plants whenever it appears crusted. *Cucumbers*, the plants on the ridges will be much benefited by being mulched with short grass or litter of any kind, they should be previously watered, which may generally be done early in the morning. *Lettuce*, where the seed has been sown in drills thin the plants to 1 foot apart. *Mushrooms*, this is now a good time to make spawn for winter and spring use; after the bricks are made and partially dried they may be placed in layers in an open shed, with a thin layer of spawn from the old beds which have done bearing between each course; the whole should afterwards be covered with sufficient dung to keep it moist and warm. *Small Salads*, keep up a succession by repeated sowings in the open ground in a shady spot. *Spinach*, it is necessary to sow once a fortnight let the weather be what it may, as it so soon runs to seed. Keep it watered during dry weather. *Tomatoes*, keep them trained to the wall and well supplied with water, or but very little fruit can be expected. Advantage must be taken of the first good shower of rain to get out the main crops of Brussels Sprouts, Broccoli, Savoys, &c.; until then they had better remain where they are. Recently-transplanted plants must be kept constantly watered, and the ground about them occasionally stirred.

FRUIT GARDEN.

THE season being favourable for growth the necessity is increased for keeping all young wood properly nailed to the walls, in order to guard against the effects of high winds. Gooseberries and Currants trained against north walls should have the leaders nailed in, and all the side shoots spurred down to within a few joints of the base. Peaches, Nectarines, and indeed wall trees in general, will be greatly benefited by occasional strong syringings, whether infested with aphides or not; for besides washing away all cobwebs, &c., which of itself is a benefit, it disturbs and routs out woodlice, earwigs, and other vermin, which are sure to congregate among the shreds and at the back of the shoots, and which, if left undisturbed, will spoil the fruit. Pay particular attention to stopping and tacking-in the shoots of Vines.

FLOWER GARDEN.

Attend to staking in due time. Peg down the early *Verbenas* and *Petunias*. Reduce occasionally some of the blossoms in the bud state on some of the very free-blooming *Perpetual Roses*; it will cause them to remain longer in bloom. Let gross shoots on fancy *Roses* be pinched off, when a few eyes long after the manner of fruit trees.

GREENHOUSE AND CONSERVATORY.

These are now gay with Pelargoniums, Fuchsias, Balsams, Cookscombs, Globe Amaranths, and Lilies, intermixed with other gay plants. A slight canvass awning should be employed, and a system of cleanliness maintained. See that there are successions of the above plants and others encouraged and growing-on for maintaining a display throughout the autumn and winter. The time has now arrived that many Heaths and New Holland plants will require more pot room. Give every attention to *Lilium lancifolium*, *Chrysanthemums*, *Salvia splendens*, *Globe Amaranths*, tree Carnations, Scarlet Geraniums, Cinerarias, Chinese Primroses, Gesneras, Begonias, Euphorbias, &c. Let them have plenty of pot room, good rich compost, a moist atmosphere, and plenty of space for the perfect development of their foliage. We have nothing that surpasses the *Epacris*, the winter-blooming *Ericas*, and the *Cytisus*, and these should not be overlooked in the crowd of suitable plants. The early-flowering Pelargoniums will now have been out of doors some time, and if the wood is thoroughly ripened, they must be cut-in preparatory to the coming season. Do not spare the knife, and after they are all cut-in place the plants in a shady situation, so that they may break regularly and strongly. Herbaceous Calceolarias which have done blooming, should have their flower-stems removed forthwith, and the plants be afterwards placed in a shady situation under the protection of a frame. The atmosphere of plant-houses can hardly be kept too moist at this season, therefore sprinkle every available surface frequently, and syringe growing stock twice a-day during bright weather. Avoid a too free use of shading, and ventilate freely in order to secure compact growth.

STOVE.

Take particular care to give liberal syringings, and keep up a constant humidity by dashing abundance of water about the floor, walls, &c. This with abundance of air and light shading will maintain a kindly atmosphere. See to the stock of *Gesnera zebrina*; also, provide a sufficient number of plants of *Euphorbia fulgens*, which is one of the most useful of winter-flowering plants both for cutting and furnishing the drawing-room, conservatory, and stove throughout early autumn, winter, and spring, if grown under a good successional system of culture. As plants will soon be ripening their young wood, they want as much light and even moderate sunshine as possible, therefore shading should be then used with great caution. At all times whenever it is, it should be removed when the weather is in any way dull. In the case of Orchids this is especially necessary, in order that the young leaves and pseudo-bulbs may be thoroughly matured. Plants in this condition, or nearly so, should be removed forthwith to a cool house, and care taken not to induce them to push again, as a fresh start would interfere with their flowering next year.

PITS AND FRAMES.

These will require abundance of air and the most careful watering daily. Some of the delicate stock will at times require shading during the middle of the day, especially when unplunged.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Turnip Fly.—In general we are little troubled with this devastator, but though we cannot see the destroyers, we see their effects so much that we have been obliged to sow thickly under a piece of cloth, and when they had two or three good-sized rough leaves, to transplant some 6 or 9 inches apart, in rows 2 feet apart. For the first time, they or a similar beetle has attacked our *Verbenas*, especially *Purple King*, and as good a deterrent as any is to damp the plants with the syringe and scatter over them a mixture of dry road dust and wood ashes. There are many insects that decamp before a good dusting of road dust.

Mulching, to keep things cool, has been the chief work in this department. Sowed successions of Onions, Lettuces, &c., for salads, and the main crop of Endive. Among a lot of fine Potatoes that at first were protected by old sashes in earth-pits, we were sorry to notice some traces of the old disease. We hope we shall see no more of it, but we almost

dread a continued cold rain after such broiling weather. A good rain and warm weather after it would do much good. Have placed little twigs and branches of trees over all our late-planted Cauliflower. Large flower-pots are good things for the same purpose, taking them off in the afternoon. Every plant or cutting succeeds all the better if never allowed to feel distress. It is much easier to keep such things right, than to make them right after they have gone wrong.

FRUIT GARDEN.

Watered Strawberries in the afternoon with clear water, as the extreme heat seemed to dry the outside of the fruit so much as to prevent swelling freely. We have had some nice Keens', but our chief supply out of doors up to the middle of last week has been Black Prince. Those plants that we took up and potted late in spring, and plunged out of doors in a heap of tree leaves, have done good service, when placed in a cold pit under glass, in keeping up a good regular supply.

Went over Peaches and Apricots on walls, thinning out the fruit, superabundant branches, and fastening what were left close to the walls, and lashing them with the engine in the afternoon to prevent red spider. We are sorry to say that some of the Strawberry plants out of doors are affected by it, and it is such a pest to spread. Keeping it down and frightening it away are better than destroying it when it boldly takes possession. Dipping plants in sized sulphur water, or even brushing the leaves with a water of soft soap and quinine, are often the quickest and easiest modes of getting rid of the little visitor, that we would all wish to be a little stranger. It is singular in what strange circumstances the spider will manifest itself. In a small Fig-house or pit rather densely clothed with foliage, a small cut-in plant of *Linum trigynum* had been left on the floor. We could not discover any insects in the house, but the above plant, standing in such a moist shady position, was even ornamented and festooned with the webs of this *Acarus*. The plant and its embellishments were carefully transferred to quarters where they could do no more harm. For many such things the furnace is the best and cheapest remedy. How often does it happen that the keeping and the attempting to clean a dirty plant, perhaps worth only a few pence, involve the loss of many pounds? Destroying insects when once they have got fairly ahead is alike unprofitable and unsatisfactory. Many a bed of Cucumbers has had quantities of tobacco wasted on it, and without avail, when a very little of that material or of quassia water would have made all right if the first insect that appeared had been seen and settled. Stirred up soil in borders of Peach-house, and gave a good watering, as the fruit is coming in, and promises to give a long succession. A little air as well as moisture to the soil is enjoyed by the trees. Cut, or removed, or placed aside any leaves shading the fruit, as flavour so much depends on full exposure. In these brightest days, however, to prevent anything like scorching of the points of the Noblesse, we syringed on the glass some water slightly whitened, just to break the force of the rays without excluding much light. More air constantly on would have saved such an operation, but the more air would have retarded the swelling, and we wished to get some fruit in.

Vineries.—In the house from which we are cutting, we have now removed all plants in pots, so that the air may be drier. In very hot days we threw a little water on the floor and stages; in dull days kept dry. Dryness now, however, greatly helps flavour, though it is rather unfavourable to large-swelled berries, if the dry process is too quickly applied. In thinning the late vinery, have as a rule left only one bunch to a shoot, and bushels of bunches have to be cut off. They make nice tarts when young—that is, when smaller than the smallest Peas. After the berries attain the size of Marrow-fat Peas, it would pretty well require a grocer's supply of sugar to make them palatable. A number of ladies and gentlemen have told us, that one of the greatest luxuries they ever tasted, was a tart made of Grapes when not larger than small bird shot, and about one-fourth part of Gooseberries just formed, and the remains of the blossom at the end of the berry.

Melons.—We have said so much on this fruit, that we would merely state now, that to have good flavour in swelling and ripening fruit, it is advisable to give water to the

roots by means of holes or upright drain-pipes, and yet keep the surface of the soil dry, so as to have a dry atmosphere. It is best when these plants are so treated as never to need any shading, unless for a few days when planted out. We dispensed with covering at night after these hot days, as the coolness, with the soil warm, was refreshing rather than otherwise; but, then, a cool night should be protected against that a check be not given.

ORNAMENTAL DEPARTMENT.

Proceeded with rolling, machining, and scything the lawn, and nearly finished planting-out bedding plants. After a time of hard continuous work, we are now having the satisfaction of seeing that we shall master our labour, instead of being mastered by it. When there is a great deal of planting-out, there is a good deal of trouble in not only making a different arrangement from the preceding year, but also in giving a diversified tone to the whole place, so that one border or group shall not appear to be a repetition of another, merely slightly varied. Our own taste would prefer the fine outline of trees and shrubs, instead of a tithe of this bedding-out, as the trees will grow whilst we sleep, and require none of the coddling attention that these bedding plants need, even when they receive the roughest, but systematic, treatment. However, sometimes we are forced to go with, and even head the stream, against our own fancies and inclinations. Two matters may be here alluded to. First. In planting out beds as we have lately done, in the case of Geraniums, Dahlias, &c., the plants are sure to flag in this weather. A little shade would be useful, but then the removing of the shade, whatever it is, when thousands of plants are used involves no small amount of labour. In general, we dispense with the shading on that account. We water just enough to moisten the roots, and most likely repeat the process a second time before the day is over, as we have no notion of the propriety of deluging the soil in such circumstances, whatever the quantity of water at command. Our great safety valve is the syringe or garden engine, generally the latter, as a few fine dewy squirts take in a large part of a bed or border. This is continued the first day, if it is a bright sun, just as soon as the foliage becomes dry. We prevent evaporation from the leaves by skiffing moisture on them to evaporate. The second day they will need the process three or four, or more times, according as the sun is bright. By the third day they generally can hold their heads upright, and want little more care in this way. Such plants raised with less or more of a ball out of beds, generally do better afterwards than plants turned out of pots; but they suffer at this season more at first if the weather is sunny, unless such a plan as the above is resorted to. It involves little labour, where there is much planting going on, as a few strokes of the engine handle scatter the mist like dew on the foliage, and on the surface of the ground, and it again rises among the plants in the state of vapour. Some gentlemen were horrified the other day at seeing the engine so used during a broiling sun, and imagined the plants would be scorched. We never saw one injured by such an application in the open air. Who has not often noticed the refreshing effects of a sunny shower? This refreshing of the foliage is often of more importance than deluging at the roots.

The other remark has allusion to watering bedding plants that are becoming established. Partly from necessity and partly from choice, if our plants stand the sun uninjured we let well alone. We would prefer refreshing the foliage of an evening if we could, especially if, from being cloudy, there was little chance of much dew. If we watered at all we would move the surface as soon as possible afterwards, to keep the moisture in and the heat out. We are sure that deluging with cold hard water, as some do, is often worse than labour lost. A little patience would often do more than the water-bucket. We saw several flower gardens last season where great expense had been incurred so as to lay on a plentiful supply of water, and after a hot day they were generally next to inundated with the hose, but with the exception of Calceolarias we can say without egotism that in the whole Geraniums, &c., were not equal to our own that had scarcely had a drop except what came from the heavens—we mean after they had fairly taken hold. One of our best gardeners told us the other day that his great

command of water he had found was of little benefit to him. If he could have had it warm and soft he thought wonders might have been done. Even then we should not forget that the more moisture we give, the more will cold be produced by the evaporation of the moisture. It is pleasing for some of us to contemplate the advantages of dryness, and good will be done if people will see that the beauty of their flower-beds depends as much on deep stirring at first and surface-stirring afterwards as on continuous drenchings from the water-can or barrel.—R. F.

COVENT GARDEN MARKET.—JUNE 24.

Ample supplies of fruit and vegetables come in. Pines are sufficient for the demand; both Grapes very plentiful, Peaches and Nectarines unusually good, being quite equal to what they generally are in July. Strawberries are high priced in consequence of the short supply, the failure of this crop being very general. New Potatoes are abundant, and of the old there is a very heavy stock on hand, much more than is likely to meet a sale.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	2	0	to 4	0			
Apricots.....	0	0	0	0					
Cherries.....	1	0	2	0					
Chestnuts.....	0	0	0	0					
Currants, Red.....	½	sieve	0	0	0				
Black.....	0	0	0	0					
Figs.....	8	0	12	0					
Liberts.....	100	lb.	0	0	0				
Cobs.....	50	0	60	0					
Gooseberries.....	½	sieve	2	0	3	0			
Grapes, Hamburgs.....	4	0	10	0					
Muscats.....	8	0	12	0					
Lemons.....	100	5	0	10	0				
Melons.....	each	3	0	to 6	0				
Mulberries.....	punnet	0	0	0					
Nectarines.....	doz.	12	0	14	0				
Oranges.....	100	6	0	24	0				
Peaches.....	doz.	18	0	24	0				
Pears (kitchen).....	doz.	0	0	0					
dessert.....	doz.	0	0	0					
Pine Apples.....	lb.	6	0	10	0				
Plums.....	½	sieve	0	0	0				
Quinces.....	½	sieve	0	0	0				
Raspberries.....	lb.	1	0	1	6				
Strawberries.....	lb.	0	6	2	0				
Walnuts.....	bush.	14	0	20	0				

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	each	0	4	to 0	6				
Asparagus.....	bundle	3	0	5	0				
Beans Broad.....	½	sieve	2	0	3	0			
Kidney.....	100	1	0	1	6				
Beet, Red.....	doz.	3	0	4	0				
Broccoli.....	bundle	0	0	0	0				
Brussels Sprouts.....	½	sieve	0	0	0				
Cabbage.....	doz.	1	0	2	0				
Capelums.....	100	0	0	0	0				
Carrots.....	bunch	0	7	0	10				
Cauliflower.....	doz.	4	0	8	0				
Celery.....	bundle	2	0	3	0				
Cucumbers.....	each	0	6	1	6				
pickling.....	doz.	0	0	0	0				
Endive.....	score	2	6	3	0				
Fennel.....	bunch	0	3	0	0				
Garlic and Shallots.....	lb.	0	8	0	0				
Herbs.....	bunch	0	3	0	0				
Horseradish.....	bundle	2	6	4	0				
Leeks.....	bunch	0	2	to 0	6				
Lettuce.....	per score	0	9	1	6				
Mushrooms.....	pottle	1	0	2	6				
Must. & Cress.....	punnet	6	2	0	0				
Onions.....	bushel	5	0	7	0				
pickling.....	quart	0	6	0	0				
Parley.....	½	sieve	1	0	1	6			
Parsnips.....	doz.	1	0	2	0				
Peas.....	quart	0	9	1	6				
Potatoes.....	bushel	2	6	4	0				
New.....	per doz. lbs.	2	0	4	0				
Radishes.....	doz. bunches	0	6	1	0				
Rhubarb.....	bundle	0	2	0	4				
Savoy.....	doz.	0	0	0	0				
Sea-kale.....	basket	0	0	0	0				
Spinach.....	bushel	1	0	2	0				
Tomatoes.....	doz.	3	0	4	0				
Turnips.....	doz.	0	6	0	0				
Vegetable Marrows.....	doz.	1	0	2	0				

TRADE CATALOGUE RECEIVED.

James Veitch, Royal Exotic Nursery, King's Road, Chelsea.
—Catalogue of New and Beautiful Plants for 1866.

TO CORRESPONDENTS.

GRAFT OF LABURNUM (*Casper*).—The purple-flowered branch grafted upon your Laburnum is *Cytisus purpurea*. It is a native of Germany.

SELECT PELARGONIUMS AND FUCHSIAS (*Tom Tit*).—Lord Clyde, Sansparul, Fairport of the Fair, Ariel, Viola, Belle of the Ball. *Fuchsias* Minnie Banks, Don Giovanni, Charming.

FIGS TURNING YELLOW AND FALLING (*S. B.*).—We suspect that the roots either get dry at the bottom, or are in stagnant moisture. If not, then lessen the tree's vigour now by ringing, and next season by root-pruning. Take no more of a ring of bark off than will heal over this season—say one-eighth of an inch in principal branches.

LILIUM GIGANTUM NOT FLOWERING (*J. F.*).—Your plant, so far as we can make out, is doing well, the bulbs not being sufficiently large to bloom. Water copiously until October with weak liquid manure at every alternate watering, and then withhold water, so as to thoroughly ripen the bulbs or roots. We think you keep the soil wet during the winter, judging from the plant going so much to offsets. Reduce them in number, and treat those left liberally with water and liquid manure, and a top-dressing of rich compost, which last may be done in spring, removing a portion of the surface soil. Secure a good growth by liberal treatment, and ripen the plants well in autumn, and they will bloom finely, unless, indeed, the border be shaded by creepers or plants, in which case this Lily may grow, but will seldom if ever flower.

LAPAGERIA SOIL COVERED WITH LIVERWORT (*Idem*).—The plant that mats over the soil where your *Lapageria rosea* is growing is *Marchantia polymorpha*, usually called Liverwort by gardeners, and is a never-failing evidence of a sodden soil. It may be destroyed by providing more perfect drainage (no plant more needs good drainage than the *Lapageria*, owing to the water required), and frequently stirring the surface with a piece of wood, removing the surface soil now, and top-dressing with somewhat rough

DESTRUCTIVE CRICKETS (A Regular Subscriber).—A few months since Mr. Fish wrote as follows:—"A friend of ours has suffered this season greatly from crickets. They have pretty well cleared off the young shoots of his vines; and in some gardens they are becoming a perfect pest. Crickets on the hearth, indeed! It would be well if they stayed there. Much as they like heat, keeping a house cold, or even exposed, will not send them away if there are other places to which they can betake themselves and be warm. We have noticed two modes successful for keeping them down, if not wholly exterminating them. The first is cutting bread into thin slices, spreading a little butter on one piece, powdering it with arsenic, putting the two slices together, and then breaking them into pieces, and placing these in the driest and warmest places. We have been assured that, when examined by a light at night, not only would the crickets be seen eating the baits, but the lively and active ones would also be seen, cannibal fashion, attacking and eating the sickly and the dying. The other mode was sinking a bell-glass level with the earth, &c., of the bed, and filling the glass nearly half full with treacle and water. Whenever the cricket got amongst the treacle he was done for. We also noticed an improvement on this—A small straw, that went nearly half across the width of the glass, was fastened by a pebble close to the outside. It was then bent repeatedly over the rim of the glass, so as to form a sort of flexible hinge. A little treacle was stuck on the end of the stem. When Mr. Cricket marches along to get at it, his weight brings down the straw, and he is precipitated into the liquid, the straw rising again ready for another adventurer."

CLIPPING OLD BOX EDGINGS (M. H.).—Old Box edgings cannot be clipped at a better time than now, as, though you cut them well in, they will soon be green, and will look well all the winter. We have seen Box cut in September that did not recover all the winter. We have seen it cut in April, and so damaged by frost as to be unsightly all the season. Cut now by all means.

BOOK (R. E.).—Brown's "Forester," published by Messrs. Blackwood.

NAME OF VINE (A. E.).—It is the Clotat, or Paraley-leaved. It is really a variety of the Royal Muscadine, from which it differs chiefly by having its leaves deeply divided into numerous lobes.

REGULATING ILL-SHAPED RHODODENDRONS (A. H.).—The most suitable period at which to cut in Rhododendrons is at, or a little before, the time when they commence their annual growth. It may be done when the flowers fade; but it is now too late to cut them in so as to have the prospect of a good growth this year, or, if growth were made, the shoots, through not being ripened, would be liable to injury from frost and wind. If the shrubs have a number of shoots at their base, they may now be cut down to these, though it would be better to defer doing so until the flowering season another year.

ROSE CUTTINGS IN WATER (A. D.).—Though we have not tried this mode of propagation, we should, were we going to do so, use soft water. We would not change the water, but drop in a few pieces of charcoal, keeping the water filled in as it evaporated; and finally we would pot the cuttings as soon as a callus was formed. A window to the south, and without shade, would be the best place. Roses strike so freely from cuttings, inserted in a cold frame from July to October, as to render striking in water recommendable, even if practicable, for its novelty only.

PERENNIALS FROM SEED—CARNATION SEED SOWING (Inquirer).—At the back of the border we would have Hollyhocks, and a whole row of them 3 feet apart; and in the next row, 3 feet in front, Campanula pyramidalis, Delphinium formosum and Hendersoni, and Tritoma uaria; in the next row, Pyrethrum in varieties, Potentillas, Lythrum roseum superbum, Lychnis chalcidion, and Digitalis gloxinifolia, interspersed with Gladiolus gandavensis; 4th row, 3 feet from the last, the others being 3 feet distant, Pentstemon, Sweet William, Campanula grandiflora, Antirrhinum, Columbine, Armeria formosa, French Honeysuckle, Statice sinuata, Rocket, Wall-flower, and Polemonium coruleum; 5th row, Pinks, Hieracium Lawsoni, Lychnis fulgens, Armeria formosa, Aquilegia Skinneri, Campanula Vidalii, Platycodon grandiflorum, Lychnis Haageana, and Papaver orientale; 6th row, Dodecatheon gigantea, Lychnis fulgens, Oenothera macrocarpa, Campanula in variety, Anemone coronaria varieties, Agrostemma coronaria, Adonis autumnalis, and Linum flavum; the last and front row, Statice Armeria, Wahlenbergia grandiflora, Oenothera taraxacifolia, Iberis saxatilis, Gentiana scabra, Dianthus deltoides, Saponaria ocymoides, Polyanthus, Primula cortusoides, Scutellaria macrantha, Statice Fortunei, Arctotis reptans, and Auricula. This is not exactly the arrangement and plants we should follow ourselves; but you confine us to those procurable from seed, otherwise we should have named plants which, we think, would answer better, and be as cheap, or cheaper, in the long run; besides, you will only want a plant or two of each kind. Now is a good time to sow them. Carnation and Picotee seed, sown now, will stand the winter in a sheltered border, and the plants will be likely to bloom next year.

GREEN GAGE TREES OVERLOADED (H. L. Ozon).—As the fruit hangs "like ropes of onions," pick off two-thirds of them; the tree will not then be weakened, and those left will be finer than if the crop were not thinned. We know of Greengage trees which were overloaded fifteen years since, and which have never borne again until this year.

CONSTRUCTING AND ARRANGING A FERNERY (Irish Subscriber).—It would be a pity to make the house 8 feet wide when you can have it 10 feet. We would have it 12 feet wide if we had space, but certainly 10 feet. Sashes 1 foot high in front are unnecessary; they add to the expense, and are no gain, but waste of room, for you can carry the rockwork higher without the front sashes. For so narrow a house we would have a path 3 feet wide along the centre, and rockwork on one or both sides—certainly at the back—carrying it to within about 3 feet from the glass roof; and in front the same kind of rockery only lower, and reaching to 1 foot 6 inches from the glass. Then, if the doorway was at one end, we would have rockwork at the other. This arrangement might interfere with your proposed mode of heating the contemplated fernery from the greenhouse; but as the heat entering by the three openings would not be sufficient for such Ferns as Davallia canariensis, there is nothing to hinder the rockwork being carried all round, except at the doorway, wherever it be, and having the pathway in the centre; only you must grow the better kinds of the hardy Ferns, which are equally handsome with those requiring greenhouse or stove protection. We have no doubt walls of turf inside would answer, and the spores of Ferns vegetate in them rapidly; but we think only the commoner kinds of Ferns would do this; for the majority of Ferns delight in rock rather than rich decaying vegetable matter. With the walls of turf you might have rockwork in the centre, with a pathway all round. This arrangement would, undoubtedly, look well, only you could have Ferns growing out of the turf wall; and yet we are puzzled to know what becomes of the turf wall when the whole is reduced to mould. We suppose the wall is not built perpendicular, or we should think the turf would leave the outer wall, but placed tier above tier, sloping upwards. We have, in the absence of large rockstones, had them placed in the form of a stage, forming steps of turf, and planting the Ferns on the shelves, which appeared as so many terraces of "living green" after the Ferns were grown up. It is, we presume, something of this kind that you propose, by having which your openings for heat from the greenhouse will be free; but they will not answer, or give sufficient heat, for half-hardy Ferns.

ROSES (Tyro).—Your No. 1, is one of the old unnamed Provence Roses, but not the Cabbage Provence. No. 2, is Great Western. The leaves of your Rose trees show that the soil requires to be manured, well watered, and the surface mulched.

CONCRETE WALKS (Amateur).—They wear well and bear sweeping. Weeds will not grow well on them, but more than on the asphalt. The chalk and gravel should be moderately small, put them in dry, and water afterwards. Roll both before and after watering.

CABBAGE PLANTS DYING (Subscriber, Wigton).—We have no doubt that the grubs which eat the stems of your Cabbage plants underground, are the larvae of the Daddy Longlegs (Tipula). The best course to pursue is to have the ground carefully examined by gently spudding it up with a knife round each plant. The grubs will be found close to the stem. A large bed may be thus gone over in a few hours, and every grub destroyed.

PRIMULA FARINOSA.—I have been up into the Craven districts collecting wild flowers, and having collected more roots of Primula farinosa (Bird's-eye Primrose), than I need, I offer the surplus to your readers. If any lover of alpine plants, particularly those who live in situations where Primula farinosa is not to be had, will send an addressed envelope, or box, with six stamps attached to pay the postage, to Mr. Robt. Smith, Dewsbury, Yorkshire, I will send them a few plants.—R. S.

NAMES OF INSECTS (Mrs. C.).—The grubs which destroy your Cauliflower plants are not wireworms. They are the larvae of a two-winged fly (very like the house fly), belonging to the genus Anthomyia. The young plants affected ought to be carefully drawn out without disturbing the larvae and burnt. The Rose leaves have been gnawed by the caterpillars of one of the Tortricideous Moths. As they have been quite smashed in the post, it is impossible to determine the species. The injured and rolled-up leaves should be collected carefully and burnt.

NAME OF ROSE (E. J.).—The purple climbing Rose is the Old Boursault.

NAMES OF PLANTS (A. E.).—1, Hypoxis Rooperi (?); 2, Anchusa italica. 3 and 4, unnameable; 5, Scilla peruviana; 6, Briza maxima. (A Young Gardener).—1, Alyssum saxatile; 2, Nepeta censis; 3, Asplenium viviparum; 4, Amaryllis striata. (A Subscriber).—Niphobolus lingua. (C. B. Powell).—Helipetrum eximium. (W. Foster Newton).—Diervilla japonica. (A Journeyman Gardener, Crief).—1, Pinus mugho; 2, Abies morinda; 3, Cryptomeria japonica; 4, Fernetia mucronata; 5, Senecio sp.; 6, Garya elliptica; 7, Menziesia polifolia; 8, Helianthemum croceum; 9, Alyssum saxatile; 10, Valeriana saxatilis; 11, Phlox setacea; 12, Antennaria plantaginifolia; 13, Veronica agrestis; 14, Myosotis sylvatica; 15, Saxifraga hypnoides; 16, Prunella grandiflora; 17, Orobis tuberosus. (G.).—Your Ferns were not numbered. They are Goniopteris pennigera and Cystopteris fragilis. (Ignoramus).—1, Asplenium adiantum-nigrum; 2, Nephrodium molle; 3, Lastrea spinulosa; 4, Cystopteris fragilis; 5 and 6, Polystichum angulare; 7, Lastrea Filix-mas paleacea. (A. K.).—1, Erica Baueri; 2, Erica pyramidalis; 3, Agapanthus umbellatus minor variegatus. (J. S.).—1, Castanea vulgaris; 2, Pyrus pinnatifida. (J. G.).—Sempervivum tortuosum. (A. S. A.).—Nepeta Musinii. (Without Name or Initials).—1, Polemonium coruleum; 2, Geranium sanguineum; 3, Saxifraga ajacifolia.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending June 24th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. deep.	2 ft. deep.			
Sun. 18	30.327	30.261	59	47	63	61½	N.E.	.00	Uniformly overcast and rather cold; overcast at night.
Mon. 19	30.315	30.280	68	32	62	61	N.E.	.0	Densely overcast; fine with hot sun; at freezing at night.
Tues. 20	30.308	30.275	80	30	62	60	N.E.	.00	Very fine; hot and dry; below freezing at night.
Wed. 21	30.296	30.274	89	39	62	60½	S.	.00	Very fine; cloudless, with excessively hot sun, and dry air.
Thurs. 22	30.298	30.125	84	40	63	60½	N.E.	.00	Dry haze; hot and dry; fine at night. [air; cloudy at night.]
Friday 23	30.181	30.064	89	53	62½	61	S.W.	.00	Very fine; very hot, with bright sun, and excessively dry
Sat. 24	30.142	30.078	76	44	62½	62	N.W.	.00	Very fine, dry air, with gentle breeze; cloudy at night.
Mean	30.298	30.194	77.85	40.71	62.57	60.98	.....	0.00	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

AMONG THE CHICKENS.

I HAVE just returned home from a visit of a few days' duration. Whether I have been in Cumberland or Cornwall, Suffolk or Sussex, it matters not; sufficient to say it was a very pleasant visit. I like a visit of a couple of nights: it is not too long nor too short—long enough to see your friends, renew the intercourse, talk over all that has happened since you met, and not so long that you become anxious about those at home, or start with terror at the sudden ringing of a bell at night, and fear a telegram to say, "Baby's got the measles!" when after all it was only that petted tom cat which scratched at the window, and was let in, and struck against the bell hung on the shutter for fear of thieves. Two nights, that is the right length—there is royal warrant for it, for the Queen's guests go for that time. By the way, don't fancy that it was a visit to Her Majesty—that cannot take place under the present Government. "WILTSHIRE RECTOR'S" presence at Windsor would cause serious alarm to the Chancellor of the Exchequer; his grim face might be laughed out of court favour—who knows?

Well, I had my visit and am home again, and that little visit was perfection—pleasant to anticipate, pleasant to enjoy, and pleasant to look back upon. All visits are not so pleasant. Thus, visits to grand houses are often horrible things. When I was younger I was (well, we are all weak when young), overjoyed to receive an invitation from a grand country gentleman who lived in ducal style. I went with great glee—it was weak of me, I own—but I returned with greater—happy, only too happy, to escape home again. That was a miserable visit. The weather was cold, and damp, and dreary. I was put into a little draughty room, opening directly upon the top of a staircase. I could not during the whole morning get into my room to write or read, as the housemaids apparently resided there until noon. Worst of all, there was nothing to do, nowhere to go, no retreat. The drawing-room, of course, was supposed to be inhabited by the ladies; in the music-room they were practising; in the library they were in full force, where one poor male guest dared to be sitting writing his letters, but looked very uncomfortable all the while. I was too shy to stay there; I durst not remain in that room alone with rustling silks—that room usurped (for I hold it was an usurpation), by a bevy of fair dames. Then there was no retreat; as to my own room, to which ever and anon, like a terrified rabbit running to his burrow, I bolted up in the hope that those maids had finished, but there they were, gaunt and weasel-faced—oh! I remember them well—brandishing brooms and rattling dust-pans. I savagely repeated Tennyson's lines slightly altered—

"Bitter housemaids, wailing fast!
Haste the clothes upon my bed.
What! the flower of life is past!
It is long before ye wed."

That was a miserable visit, and I was a wretched guest. What alleviations to my miseries were huge footmen matching like twin elms, or gorgeous furniture, or dazzling plate? I had rather have had a leg of mutton to eat, a deal table, with a five-pound-a-year little maid to wait on me, and the only plate my own, and that willow pattern. I shook my fist at that big mansion when nearly out of sight down the drive—it was a comfort to shake my fist at it, and I said through my clenched teeth, "I'll never enter your door again—no, never!"

But a truce to all unpleasant things. I hold it to be a law with all agreeable guests not to hang heavy upon their host's hands, and especially to get off somewhere during the interval between breakfast and luncheon. "To your room, go?" "Yes, if the housemaid permits," but go somewhere. "Well, during my late visit I had somewhere to go, for my host was a poultry-fancier. I went and sat "among the chickens," my felt hat, so light it was scarcely felt, on my head, and my camp stool in hand. Down the garden paths were numerous coops with chickens of various ages coming in and out. I sat me down in the front first of one

black ducklings; I saved the life of a very juvenile one who was lying on his back having nearly his last kick, but my hand saved him from—"kicking the bucket." A man passed me while sitting among the chickens and said, "Nice gardeners them chickens be, sir." I made no answer, so perhaps he thought I agreed in his dislike of the presence of the little things in a garden, but I did not agree with him. One hen had but one chick. "Oh, that cold spring!" thought I. None had large broods. The mother of the one was, of course, the most fussy of all, just as human mammas are; and very capricious and troublesome was that one, just as only sons usually are. Chickens vary in temper. There is the sullen chick; the glutton who runs off with what he cannot swallow. A neighbour's Hamburg cock choked himself in that way. I long to tell the story to all greedy chicks—indeed, it ought to be inserted in every chicken primer. Then there is the persevering chick, who at the peril of breaking his beak will break the hard crust. There is also the good-tempered chick who pecks nobody, and the sharp-tempered who pecks everybody; the cuckoo-like chick who turns another out of the best place, and the poor little chick, feather-light, who runs—skims along, rather—with his wings drooping, the very last to get home, and is so thin that the coop-bars are a world too wide for his lean form. He never will grow up. Well, then, he never will feel the knife run into his jugular artery. "Whom the gods love die young." And if chickens vary in temper, how the same vary in appearance at different ages. At first all are "things of beauty;" Cochins, the little golden fleeces; Black Bantams, scarce chicks, little birds Martin-like; Game with their three stripes, and long, fine, brown, polished noses; Hamburgs, speckled;—lovely little things every one of them. But as with mankind so with chickens.

"Beauty is but a fleeting good;"

for there soon sets in the ugly age when they each and all become ragged wretches. If they have access to a manure-heap, which mine have, they become dirty as well as ragged. They at this age strongly resemble London street boys, with a queer, thievish, sideway, cheating look, ready to gamble for half-pence, or to whine out, "Please toss us a brown, sir." I own I pay little attention to them. I don't think they look respectable company. I had a thought of sending them to the ragged-schools. I exclaim, "Are these the lovely things of three weeks since? What! to this have ye come?" I think of Hamlet in the churchyard scene. I contemplate writing a paraphrase of Juvenal's immortal tenth Satire more Pope and Swift, and applying the famous "*Expede Hannibalem*" to — "Oh ye gods!" — to chickens. Or I remember Hervey's "*Meditations among the Tombs*." I read it years ago at an old lady's, and was frightened by a cut representing a figure divided from top to toe by a straight line, on one side, one half, a lovely lady dressed in the height of the fashion of that day, and very beautiful, too, she was; the other half a grim grinning skeleton. Underneath were the words, "Corinna was one night at a splendid ball, the next," and so on. Such a change, at least almost such a change, takes place in chickens; so evanescent is chicken beauty, but unlike human beauty, save when the sweet-looking matron almost eclipses the slender girl one knew twenty years ago. And this takes me to the field beyond the garden, where the bigger chickens were, and marvellously had they recovered their beauty. They were Cochins every one—some lying down, others peering through the long grass, showing their sensible-looking heads and bright golden hackles; some, the bigger, off for a stroll—no mother's attendance needed by them: oh no! quite strong, and old enough to take care of themselves. How clean and pretty the new-grown feathers look! That large, light-coloured pullet is exquisite in feather, the yellow straw hackle and the creamy back. The hobbledehoy cockerels, though ungainly, are not ugly; and as the new fluff blows about on both cockerels and pullets, I perceive their beauty is fast returning—the beauty of a fuller growth, not baby beauty, but the beauty of youth.

I enjoyed greatly my two mornings "among the chickens." I learned that even early in the year a brood reared in a cucumber-frame was entirely lost—not one survived, owing to their not having sufficient ventilation. Cochins do not require warmth, and die if they have heat. I learned how

some improve that did not promise well, and how a tall cockerel became a lanky cock, and that a chicken that carries its tail awry, as a chicken will as a hen do just the same.

My last act was to choose a pen of adult Cochins for an exhibition, and by to-day's post the delighted owner tells me that pen has taken first prize. "Well done!" say I. I am sincerely glad, and not a little proud of my judgment. It was not unaided, however. I looked at the pen after we had chosen them when they were in the basket, and pronounced them "beautiful." N.B.—They were not so large as so thoroughly well-shaped. The Judge who awarded the prize had the reverse of a coarse taste.—WILTSHIRE RECTOR.

THE BEVERLEY EXHIBITION OF POULTRY AND PIGEONS.—JUNE 21st.

For a period of eight years an exhibition of poultry has annually taken place, under the superintendence of a committee of gentlemen connected with Beverley, and year by year its improvement has become more and more apparent, until it holds place among the best of the poultry shows in the United Kingdom. By one of those most singular coincidences that so rarely happen, the entries of last year, and those of the Show just held, tallied as to numbers to a pen; but it must be borne in mind, that the Exhibition of this year, as a whole, infinitely surpassed in quality any of those preceding it. That public interest and public confidence in the Beverley Show are thus strongly manifested has no doubt arisen from the rigid punctuality always displayed in the careful repacking and speedy return of the specimens the instant the meeting has closed for public inspection. Invariably by the very first train leaving Beverley on the morning following the exhibition, every pen has been ready and awaiting dispatch at the railway station, and, consequently, all grumbings and disappointments have been done away with altogether, as to the return of the birds exhibited, for, on the contrary, such firm confidence has been established, that year after year this Exhibition has increased in popularity, until it now embraces contributions from nearly every noted yard in the kingdom. Another most favourable feature is the fact that the birds are exhibited only a single day, and, therefore, very little (if any) falling off in condition can ensue from their very brief confinement. It is barely necessary to name, that the attention paid to the welfare of the birds during the Show, is also of the highest character, and that the Norwood Assembly Rooms, as to construction, are perfect both as regards light and ventilation, also for the purposes of a poultry show.

The Game class for a cock and one hen headed the Beverley list, open to all colours; and, as the sequel proved, in such competition Brown Reds had a decided advantage. Of this variety of colour there were several extraordinarily good pens shown, and the competition was necessarily severe. Mr. Matthew, of Stowmarket, took the first place, closely pressed by excellent pens, exhibited respectively by Messrs. Boyes and Julian, both of Beverley. Another good pen was shown in this class of the same colour, but the hen being "duck-footed," or, as is commonly called in this district, "duck-heeled," it was impossible to hold place in any competition, that being always a fatal defect. In "Single Game Cocks" (of any colour), Brown Reds again carried the day throughout the whole prize list, the prizes falling to Mr. Julian, of Hull; Sir St. George Gore, Bart., of Hopton Hall; and Mr. Matthew, of Stowmarket. In point of first-class condition, the Game birds of this year's Show were evidently scarcely equal to those of previous years. The Spanish class was undoubtedly, perhaps, one of the finest ever placed before the public, a fact pretty well illustrated from the circumstance, that twelve pens out of an entry of only sixteen, received favourable notice on the prize list. Mr. Beldon, it will be seen, took first and third; and Mr. Rodbard the second premiums. Few birds exhibit at this time of year to greater disadvantage than Grey Dorkings; many of the pens were, doubtless, beyond the usual merit of even prize birds, but still want of condition was manifest throughout most of them. The class for Cochins was open to every colour, and a marvellous competition ensued; the truth being, it was the class of all others causing most public attraction in the Show. Captain Heaton, of Manchester, here took first prize;

with a most excellently well-shown pen of Buffs; and second with Silver Cinnamons; Mr. Zurhorst, of Belle Ville, Dublin, being successful with a pen of unusually good White ones for third position. Our readers will, by referring to the prize list, find that not less than ten pens from the best breeders of Cochins in the kingdom, also were "highly commended," besides four pens one step lower in the scale. The competition was very severe. Although excellent otherwise, we were sorry to see a pen or two of Cochins of good natural merit, had their tails purposely broken down and otherwise tampered with, such practices being quite inadmissible. Every exhibitor of Hamburgs knows from experience, that to show Hamburgs at midsummer is one of the most precarious adventures in poultry exhibiting. At this season the plumage of these birds suddenly fades away, and specimens that might be first-rate only a few days previously, go out of character so much as to defy even their identity. Condition in these classes could, therefore, be hardly expected, but it is certain these classes, nevertheless, contained very many pens that a couple of months to come will be no mean rivals, and, indeed, uncommonly difficult to beat anywhere. The Polish class was a very superior one, every variety being well shown. Silver-spangled ones carried the day, and Blacks were second. Every pen in the Polish class was well shown. The class for "Any other variety," was a strong one and far exceeded this class at our general shows. A pen of the now rarely seen Ptarmigans were first, and a pen of Brahmas second prize. The Black Hamburgs, of which there were four pens shown in this class, are also worthy of especial mention. In the Game Bantam class, the time of year now so closely drawing on moulting time, told unfavourably, many first-rate specimens now shown being in a condition quite inopportune for exhibition, still the bulk were good birds, Brown Reds taking precedence, and a good pen of Black Reds the second position. In the class for "All other varieties of Bantams except Game," a beautiful pen of Cochin Bantams was first, and a pen of excellent Golden-laced Sebright Bantams second, to the absolute exclusion of many other varieties of great merit—viz., Black ones, White-booted Bantams, and White ones also, the prizes being confined to two, a first and second only.

That Mrs. Seamons, of Aylesbury, should monopolise both of the Aylesbury Duck prizes at Beverley, proves that lady courts rather than dreads competition. After so long a journey the manner in which they were shown reflects great credit on her management. The Rouen Ducks proved not nearly so deserving a class, but the extra Duck class contained Black East Indians, the property of Mr. Jessop, of Hull, some very good domesticated Wild Ducks, shown by the same gentleman, and some deserving specimens of Carolina, and also Grey Call Ducks.

The Pigeon show was an excellent one, and proved highly attractive, and the classes for *Canaries*, and other small birds did not lack admirers. Mr. Yardley won the silver medal given to the most successful exhibitor of Pigeons.

As in former years, the grounds of Charles Reynard, Esq., were freely thrown open for the purposes of a flower show, and thus the combination of sightseers was this year even beyond the average, as to both gaiety and numbers, for both portions of the meeting were excellently attended. There was a brilliant display of fireworks, and a large assembly of visitors in Mr. Reynard's ground during the evening.

The weather proved most satisfactory, being perfectly fine and free from rain, yet of a temperature so subdued, as to render the flower tent comfortable to the company generally. In bright sunshine the result might have been far less satisfactory, as the experience of the previous day fully attested. We congratulate the Beverley Committee on the success of their show, a result they fully deserved.

GAME.—First, S. Matthew, Chilton Hall, Stowmarket, Suffolk (Brown Reds).—Second, W. Boyes, Beverley. Third, H. M. Julian, Hull. Commended, F. Eaton & Mabon, Jedburgh, N.B. (Duckwing).

GAME COCK.—First, H. M. Julian, Hull. Second, Sir St. G. Gore Bart, Hopton Hall. Third, S. Matthew, Chilton Hall. Highly Commended, W. Bourne, Newton Heath, Manchester; W. Boyes, Beverley. Commended, Sir St. G. Gore, Bart.

SPANISH.—First and Third, H. Beldon, Gortatock, Dingley, York. Second, J. K. Rodbard, Wrington, Bristol. Highly Commended, G. Wallace, Aberdeen; W. Massey, Fulford, York; E. Brown, St. Philip's Road, Sheffield. Commended, S. Robson, Brotherton; E. Joyce, Clifton, Bristol; H. Tebbay, Fullwood, Preston; Capt. Heaton, Lower Broughton; Burch and Boulter, Sheffield.

DORKING.—First, Rev. J. F. Newton, Kirby-in-Cleveland. Second, J. White, Warley, Northallerton. Third, Miss A. Charter, Driffield. Highly Commended, Sir St. G. Gore, Bart. Hopton Hall.

COCHIN.—First and Second, Capt. Heaton, Lower Broughton, Manchester. Third, F. W. Zurbur, Belleville, Donnybrook, Dublin. Highly Commended, T. Stretch, Ormskirk; H. Beldon, Bingley; C. W. Brierley, Middleton; H. Tomlinson, Balsal Heath Road, Birmingham; W. Dawson, Hopton, Mirfield; T. Boucher, Birmingham; E. Smith, Middleton; W. Harvey, Sheffield. Commended, E. Adams, Birmingham; C. W. Brierley, Middleton, Manchester; H. Merkin, Driffield; R. White, Broom Hall Park, Sheffield.

HAMBURG (Golden-pencilled).—First, S. Smith, Northowram, Halifax. Second, Birch & Boulter, Sheffield. Highly Commended, Sir St. G. Gore, Bart. Hopton Hall. Commended, H. Beldon, Bingley; H. Snowden, Great Horton; J. Preston, Allerton, Bradford; S. Smith, Northowram, Halifax.

HAMBURG (Silver-pencilled).—First, H. Beldon, Bingley. Second, H. Snowden, Great Horton. Highly Commended, Sir St. G. Gore, Bart. Hopton Hall; W. Harvey, Sheffield. Commended, A. K. Wood, Burnside, Kendal.

HAMBURG (Golden-spangled).—First, J. Newton, Sladen, Leeds. Second, W. Driver, Bank House, Keithley. Highly Commended, A. K. Wood, Burnside, Kendal; Sir St. G. Gore, Bart., Hopton Hall; Messrs. Burch and Boulter, Sheffield.

HAMBURG (Silver-spangled).—First, H. Beldon. Second, Sir St. G. Gore, Bart. Commended, A. K. Wood, Burnside, Kendal.

POULTR.—First, C. W. Brierley, Middleton. Second, H. Carter, Upperthong. Highly Commended, H. Beldon. Commended, H. Beldon; J. Heath, Nantwich.

ANY OTHER VARIETY OF FARM-YARD CROSS.—First, R. Loft, Woodmansey (Sultans). Second, Mrs. Seamons, Hartwell, Aylesbury (Brahmas). Commended, J. Wood, Chorley (Brahmas); M. Oliver Darlington (Black Hamburgs); H. Beldon, Bingley (Brahmas and Black Hamburgs); W. Harvey, Sheffield (Brahmas).

BANTAMS (Game).—First, D. Ashworth, Halifax. Second, J. Ward, Chesterfield. Highly Commended, E. Smith, Hull; C. W. Brierley, Middleton; J. Pickering, Driffield; G. Omerby, Highgate, Beverley. Commended, R. Tate, Leeds; G. Manning, Springfield, Essex.

BANTAM (any other variety).—First, T. Boucher, Birmingham (Buff Cochins Bantams). Second, C. W. Brierley, Middleton. Highly Commended, H. Beldon, Bingley (Laeds); W. Harvey, Sheffield (White Booted Bantams). Commended, Sir St. G. Gore, Bart.

GAME BANTAM COCK.—First, Sir St. G. Gore, Bart. Second, R. Smith, Hull. Highly Commended, Master C. Crookland, Wakefield. Commended, T. C. Harrison, Hull; C. W. Brierley, Middleton.

DUCKS (Aylesbury).—First and Second, Mrs. Seamons, Hartwell, Aylesbury. Commended, O. A. Young, Driffield.

DUCKS (Rouen).—First, A. Catter, York. Second, H. Beldon, Bingley. **DUCKS (any other variety).**—First and Second, J. R. Jessop Hull (Black East India and Wild Ducks). Highly Commended, T. C. Harrison Hull (Brown Call); A. Catter, York.

PIGEONS.

POWER COCK.—First, J. Smith, Walkley, Sheffield. Second, H. Yardley, Birmingham. Third, W. Watson, Beverley. Very Highly Commended, W. Harvey, Sheffield. Highly Commended, E. E. M. Roys, Ashby-de-la-Zouch; C. Cole, Bradford; H. Yardley. Commended, S. Robson, Brotherton; C. Cole. *Hens.*—First and Third, C. Cole. Second and Highly Commended, E. E. M. Roys.

CARRIER COCK.—First, H. Yardley. Second, W. Massey, York. Third, C. Cole. Highly Commended, E. E. M. Roys; J. Firth, jun., Dewsbury; E. Brown, Sheffield. Commended, H. Yardley. *Hens.*—First, C. Cole. Second, H. Yardley. Third, W. Massey. Highly Commended, E. E. M. Roys; H. Yardley.

ALMOND OR KITES.—First, H. Yardley. Second, C. Cole. Third, J. Smith, Walkley. Highly Commended, W. Watson, Beverley; E. Brown, Sheffield. Commended, C. Lythe, Cottingham.

TUMBLERS (Any other variety).—First, H. Yardley. Second, J. Smith, Walkley (Black Mottled). Third, E. E. M. Roys (Black Mottled). Highly Commended, J. R. Jessop, Hull (Mottled). Commended, C. Cole.

TRUMPETERS.—First, A. Middleton, Newport. Second, E. E. M. Roys. Third, H. Yardley. Highly Commended, J. R. Jessop, Hull.

BARBS.—First, W. B. Van Haansbergen, Newcastle-on-Tyne. Second, H. Yardley. Third, E. Brown, Sheffield. Highly Commended, J. Firth; C. Cole; H. Yardley; W. B. Van Haansbergen.

PANTAILS.—First, W. B. Van Haansbergen. Second, T. Ellerington, Woodmansey. Third, T. C. Taylor, Middlesborough. Highly Commended, J. R. Jessop. Commended, H. Yardley.

JACOBIANS.—First and Second, T. Ellerington, Woodmansey. Highly Commended, E. E. M. Roys.

TURBITS.—First, J. R. Jessop. Second and Third, H. Yardley. Very Highly Commended, W. B. Van Haansbergen. Highly Commended, E. E. M. Roys; W. Harvey, Sheffield; W. B. Van Haansbergen.

NUNS.—First, J. Pickering, Driffield. Second, B. Leason, Driffield. Third, A. Middleton, Newport. Commended, W. Harvey, Sheffield.

OWLS.—First, Third, and Highly Commended, E. E. M. Roys. Second, H. Yardley. Commended, J. R. Jessop.

DRAGONS.—First, W. Watson, Beverley. Second, H. Yardley. Third, T. Statters, Hull. Very Highly Commended, H. Yardley. Highly Commended, W. Massey; C. Cole; H. Yardley.

ANY OTHER VARIETY.—First, H. Yardley. Second, W. B. Van Haansbergen. Third and Very Highly Commended, E. E. M. Roys. Highly Commended, J. R. Jessop; T. Statters, Hull; H. Yardley; W. B. Van Haansbergen.

SELLING CLASS.—First, T. Ellerington (Pantails). Second, B. Leason. Third, W. Massey. Highly Commended, W. Massey; W. Watson.

CANARIES.

BELGIAN (Cock or Hen).—First, J. Campay, Beverley. Second, W. Campay, Beverley. Highly Commended, G. Grant, Beverley. Commended, C. Powell, Beverley.

MARKED (Cock or Hen).—First, J. Tebb, Beverley. Second, E. Jameson, Beverley. Highly Commended, Miss Campay, Beverley; Mrs. W. Pottage, Beverley; W. Coates, Beverley.

ANY OTHER VARIETY.—First, G. Grant, Beverley. Second, J. Campay, Beverley. Highly Commended, Miss A. Macoy, Beverley; Mrs. W. B. Pottage, Beverley.

NEST OF YOUNG CANARIES (Clear).—First, J. Kelly, Beverley. Second, F. Tritschler, Beverley. Highly Commended, J. Kelly; if this nest had consisted of three birds instead of two they must have been first.

NEST OF YOUNG CANARIES (Marked).—First, W. B. Taylor, Beverley. Second, Mrs. Thornton, Beverley. Highly Commended, E. Campay, Beverley.

BEST MULE.—First, W. Campay, Beverley. Second, J. Widdall, Beverley. Highly Commended, Mrs. J. Dale, Norwood.

BEST REDCAP.—First, Mrs. Campay, Beverley. Second, E. Davis, Beverley.

EXTRA STOCK consisted of three Australian Parakeets, Very Highly Commended; six Java Sparrows, Commended; and a pair of Bramblings.

The Poultry was judged by Edward Hewitt, Esq., of Sparkbrook, near Birmingham; and the Pigeons by Wm. Boulton, Esq., of Beverley; whilst the premiums for the Singing Birds were awarded by these gentlemen conjointly.

WARNING TO POULTRY PURCHASERS.

ALLOW me to put purchasers of poultry on their guard against what I consider extremely like swindling. Some time ago I noticed an advertisement in your paper of Spanish fowls, &c., intending purchasers to apply to certain initials at the post-office, Bayswater, London. I applied and received a reply, with card enclosed, purporting to be from Mr. — surgeon, 4, Queen's Road, Bayswater, London, stating price and particulars, and requesting a post-office order, on the receipt of which the fowls should be sent off. Unfortunately placing reliance on the apparent genuineness of the affair, I sent off a post-office order, which was acknowledged; and in a few days afterwards, instead of the fowls, I received a letter stating that they had been stolen on the night before they were to have been sent off; but that, unless they could be found in the course of a few days, the money would, of course, be returned. I waited some time, and when next I wrote had my letter returned through the dead letter office with the remark on the back "Returned from the post-office, 4, Queen's Road, Bayswater, W., address not known." I suppose I have seen the last of my post-office order.—A VICTIM.

[This is a new and very artful mode of swindling. The swindler in this instance made use of the name of a gentleman of high respectability resident at Bayswater, but with an address different from his, so that if any persons inquired as to the respectability of the alleged vendor they might be misled to believe that he was really the vendor, but had changed his residence.]

BUCKINGHAMSHIRE DUCKERS.

DUCKERS are a class of persons resident within ten miles of Aylesbury, whose chief, if not only employment is to furnish ducklings for the London market. They may be divided into two classes—those who keep Ducks solely to furnish eggs, and those who rear ducklings from those eggs. There are individuals in the former class who keep 5000 head, and in the latter, who despatch 2000 ducklings to London every season between February and October.

In Ireland the pig is allowed free entrance to his master's cabin, and the warmest place at the hearth, because he pays the rent. In Buckinghamshire Ducks are held in the same esteem, and enjoy the same privilege. On account of the fifth so engendered (and I know one small hamlet of twenty houses inhabited by duckers, wherein eighteen persons died of cholera in 1849), many landlords refuse to allow their tenants to keep Ducks. If they do not object, the village board of health have rare work with the duckers; and if the cottages are kept clean, the duckers usually contrive to be summoned before the magistrates for defiling running streams.

When Christmas has turned, and the Ducks begin to lay, the duckers look out for a brooding hen. Poultry books tell you, that you should never sell good brood hens. The duckers know better. When a brood is raised, the foster-mother is sold, because her keep in the interim would cost more than the purchase of another when wanted.

Under the advice of my Mentor, I laid out one shilling in the purchase of a hen, who might from her venerable appearance have laid eggs for the breakfast of the Red Fisherman, when

"He fishes in the sea with 'oak and sham.'"

The pedigree was doubtful, as she exhibited the distinctive ugliness of every known species of fowl. She might be "a run one to look at, but she was a good one to go." She brought out one brood of Ducks, one clutch of Guinea fowl, and one hatch of chickens in the year, besides laying eggs in the intervals of business. Duckers always buy a steady old Dame Partlett, who has been used to the line. They allow themselves to be handled with impunity, and sit closely when young hens are giddy, and break the eggs. When the hen is bought at a price varying from five shillings at Christmas, to half-a-crown in June, she is taken home, and deposited on her future nest under an inverted basket, whilst the ducker goes to purchase the necessary eggs. Their price is usually the same with that of the hen under which they are to be put. Duckers never answer advertisements in the paper, and part with a golden portrait of Her Majesty for a sitting of eggs. The nest is made by putting straw on the ground, on which is placed a piece of damp sack to receive the eggs. Duckers say that if the eggs are dry, the ducklings cannot chip out; therefore during the period of incubation the eggs are sprinkled daily with cold or lukewarm water whenever the hen gets off to feed. When the eggs are duly deposited, the hen is placed on them, and covered as before. All the eggs are warranted to quicken, so on the third day they are individually examined by the light of a candle. Those which have not quickened are recouped by the vendor, and the fresh eggs carefully placed with the others. The basket is then removed, because the hen is by that time habituated to her nest, which she will not leave more than once a-day for the purpose of feeding and dusting herself. The eggs require the heat of the hen for about thirty days, and on the day before that she feels them to be coming out, she will not leave the nest even to feed.

When the ducklings are hatched, they are removed from the nest and placed in flannel by the fire. Poultry books recommend peppercorns to be forced down their throats, which is as natural and sensible a practice as that adopted by those nurses who take great care that the infant should make its first extraneous meal off an oyster, or the brain of a hare. That is a fact, and I have often been disturbed at dinner by an applicant requesting the latter delicacy upon the ground aforesaid.

The ducklings never see their foster-mother after they are removed from her, through fear that she might kill them by treading on them. She is forthwith sold, and for about a week they are fed in the house upon bread crumbs and chopped egg. At the end of that time they are taken out of doors, and placed two or three broods together in a pen under cover, whence they emerge once a-day to bathe themselves. If let out oftener, they walk the fat off.

It takes about eight weeks to fatten them ready for market. If kept longer, they become stubby, as their wing feathers are developed and they fetch a lower price. Their food is barley meal mixed with brewers' grains, pollard, and greaves. Chopped lettuce and young onions are given when practicable. A bullock's liver when unfit for market, a dropped calf or diseased cow is a *bonne bouche*, to which but few Ducks attain, although it brings them on rapidly.

The success of the ducker depends on the goodness of the eggs. He can generally rear those which come out of the shell, unless the fever intervenes and carries off all his stock. When saleable they are despatched on Mondays or Fridays to a salesman in Newgate Market, who next week returns an invoice, with a P. O. for the amount. The earliest Ducks fetch 7s. 6d. a-piece. In August they realise 2s. 6d., after which they cease to be sent. This branch of industry supports hundreds of persons, and assists thousands in procuring those articles which their wages would not furnish. Depend upon it, the duckers know their own business best, and that it is more profitable for them to rear ducklings as above-mentioned during the season than to be bothered with hens during all the year.—(Once a Week.)

SPONTANEOUS UNION OF SWARMS.

PERMIT me to join you in expressing a hope that Mr. Stuttle will tell us something more about his hive of bees with three swarms in it. For his information I will repeat

what occurred in this neighbourhood from the amalgamation of two first swarms. In a fine May, some years ago, a man had two hives, which swarmed at the same time and settled on the same bush. He, chancing to have a very large hive, shook them into it. The season was a remarkably fine one, and in eight days from the time of swarming the combs gave way and broke down with the weight of the honey, destroying thousands of bees, and the man was compelled to drive the remainder into an empty hive; but from the full one he took 60 lbs. of run clear honey, all collected in little more than a week!

If Mr. Stuttle's hive is so full as he describes it I would recommend him to raise it at least a foot, and see how long in this fine weather his three swarms will be in filling it.—T. G.

PREVENTING EXCESSIVE SWARMING, &c.

AFTER a long silence I am tempted to make a few notes upon sundry apian matters which have come under discussion in your pages of late, and I will begin with the subject which heads this paper. I quite agree with the remarks of the Editor (May 30, page 423), as to the inutilty of destroying the queens of swarms with a view to prevent swarming; at the same time it is very vexatious to see a fine stock throw off swarm after swarm, some of which may be lost, and most of them be worthless, not to speak of the impoverishment of the stock itself. The tendency of my own bees to swarm excessively this year has set my invention at work, and I suggest for imitation the very simple plan, which I have successfully adopted, of putting the swarm in the stock's place. Here, of course, is no prevention of swarming, but it does prevent all "excessive" swarming. I would, in fact, advise the apian to be beforehand with his bees, and to make them swarm artificially by driving as soon as he is aware of the existence of sealed royal cells in his hives, otherwise he may chance to lose his swarms. Sometimes you cannot prevent swarming.

"B. B.'s" Dilemma.—The above remarks lead me to notice the case of "B. B.," with whom I can sympathise, having myself lately experienced a similar dilemma. In my own case the queen of the swarm, which took possession of a hollow tree, was a pure Italian of my own rearing. I did not allow "the errant swarm to remain in the domicile it had chosen until the autumn." The tree (a quarter of a mile off) was first carefully examined, then pieces of the wood were sawn off till the cavity was fully exposed to view. In two of the pieces sawn off large clusters of bees were found and brought home, but the queen not being among them, they were soon all off again. Not to be baffled, I proceeded myself to the tree and smoked them out early the following morning. A bee-dress and gloves, a common hive, and an unlimited supply of matches and brown paper, soon enabled me to bring off my valuable queen and swarm. Holding the hive in such a manner that the bees could pass uninterruptedly from the tree into it, I put the brown paper into the cavity under the bees, and soon had the pleasure of seeing the queen and her subjects march up. In due time the hive was enveloped in a cloth, and carried away. To make sure of her I put her in a new box in my bee-house, in place of the old stock, where she is doing wonders in a very contented spirit.

Hiving of Natural Swarms.—This I prefer doing in the way indicated at page 439, first into a common straw hive, and then into the permanent box; but I find it better to transfer them at once, or as soon as possible, not waiting till evening. I like all these operations to be done in broad daylight, when the bees are active and expectant of locomotion.—B. & W.

BEES PERSISTING IN SWARMING.

ABOUT a week ago all my bees were in a state of great commotion. They are in a south aspect at the bottom of the kitchen garden fully exposed to the sun. I had previously obtained two swarms from the same number of stocks, and had placed a bee-glass over one of the hives to prevent its swarming again, and a piece of comb inside as a guide; but they neglected that, and began building from the bottom. However, they seemed all right and very busy;

but after their commotion a swarm issued again from each hive, and now they have quite deserted the bee-glass, and to-day seem likely to swarm again.—*Rector, Kent.*

[We fear you must now accept the swarms, and forego the attempt to obtain honey this season by supering your old stock; but the glasses may yet be filled if you transfer them at once to the two first swarms.]

BEES AFTER SWARMING.

ABOUT four weeks since there issued from a plain straw hive of mine a very heavy swarm. For some days previously, not only did the bees hang in clusters about the entrance, but they almost entirely filled a Taylor's super placed over the hive. After the swarm had left the super became empty, though it appeared that while crowded together in the super the bees had contrived to continue the comb through the aperture at the top of the hive, some 5 inches upwards, into the super. There was honey in some of the newly-constructed cells, but the bees must either have consumed it or taken it away to store the main hive, for it soon disappeared.

Now, the drones which previously to the swarm issuing bore but a moderate proportion to the working bees in number, have become relatively so numerous, that during the few hours that the drones take the air they seem to be about one to three of the workers, and I can discern no progress whatever, so far, certainly, as the super is concerned.—*C. H. H.*

[What you describe is exactly the normal state of things after the issue of a swarm. The super is not likely to be again occupied in force this season, and one or two more swarms may probably issue, whilst the drones will have their fling until the juvenile monarch of the old stock commences egg-laying. Soon after this event takes place, these idlers will have notice to quit, such notice being speedily followed up by a summary process of ejection on the first unfavourable change of weather, or possibly even earlier.]

VARIOUS QUERIES.

1st. WHAT is the best way and time to change a hive of bees from an old hive to a new one?

2nd. Is it wrong to put the bee-glasses on a new hive and fresh swarm (this year's) before the bees fill the under part of the hive with combs and honey?

3rd. How should the glass be prepared for the bees? Should there be a cross stick as well as an upright one, and is there any fixture to be put on the top of the glass to give the bees air?—*A SUBSCRIBER.*

[Your hive should swarm at least twice in such a season as this. Three weeks after the issue of the first drive all the remaining bees out of the old hive, and unite them to the second swarm. The contents of the original hive may then be appropriated, and will be found free from brood.

There is no objection whatever to putting a moderate-sized super on a swarm, and it is best done before the stock hive is quite filled with combs.

Glasses should be furnished with some pieces of clean worker comb, and an upright and such cross sticks may be used as are necessary to support them, taking care that those props are as little visible as possible. No contrivance is necessary for ventilation at the top of the glass.]

THE LIGURIAN BEE AND THE VINEYARDS.

I HAVE been asked to confute a very absurd paragraph under the above heading, which has been copied from a Melbourne paper into several of our English newspapers, and which declares that much damage has been done to the vineyards in Australia by the new bee. I need only state that no complaint of the kind appears ever to have been made in Italy, where this bee is indigenous, nor has it been in the Rhine provinces of Germany, into which the Ligurian bee has been introduced whilst working

that would in the slightest degree tend to give even a colour to the imputation has ever come under the observation of—*A DEVONSHIRE BEE-KEEPER.*

SHEEP DYING AFTER SHEARING.

WHAT is it that sometimes causes sheep to die after shearing? I had my little flock of twenty sheep and thirty lambs shorn last week. On going out to look at them in the evening one ewe looked ill, and I asked the man who has charge of them what was the matter. He said one sheep with two good lambs had been looking very ill after being shorn. They had bled her in two places and given her castor oil. I directly ordered gruel with gin in it, but before it could be given the poor animal died. Three men sheared the sheep and lambs, they began at half-past three o'clock and had finished soon after six. Do you not think the sheep must have been injured by the haste and roughness used? This is a matter of some consequence to many of your clerical country readers.—*E. R.*

[We incline to the opinion that your sheep died from exposure to the great cold which characterised the nights at the time they were shorn. If you do not live in a southern district, you had better have waited until July before you had them clipped. Bleeding and castor oil hastened the catastrophe, if the sheep were ill from exposure to the cold. The men, if expert, did not work too fast. A good clipper will shear from fifteen to twenty and even more sheep in a day.]

OUR LETTER BOX.

COMPLAINTS AGAINST THE DECISIONS OF JUDGES.—These complaints are always steps in the wrong direction. We are aware that it is difficult to submit with dignity to defeat, but silence under the reverse is by far the wisest course. It so happens that the complaints we have recently received we know to be groundless, for good judges in no way connected with those who gave the awards approved of the awards appealed against. Some of the complainers have had the bad taste to abuse the judges in their absence, and to write to them very ill-advisedly. And to them, and indeed to all exhibitors, we say, If you cannot lose with good temper never send a pen of fowls to an exhibition. We refrain from mentioning names, and will conclude by saying that unless evidence is placed before us that an award has been founded on dishonourable motives we never will assail it.

BOOPY FOWL (*M. A., Walthamstow*).—Give it one grain of powdered sulphate of copper mixed in a little soft food daily. Feed on oatmeal moistened with ale. Allow it to have as much green food as it will eat. Separate it from all the other fowls. If not better in a week kill it.

POLE PIGEON-HOUSE (*F. T. H.*).—Any carpenter could make you one. If you prefer one ready made you had better advertise, stating size, &c., that you require.

FOOD FOR YOUNG BULLFINCHES (*Matilda*).—Egg boiled hard, and chopped fine, shell and all, with a little crumb of stale bread crumbled small, and a sprinkle of mawseed. Use for your melons, &c., the water which has been placed in the sun.

BOOK ABOUT POULTRY (*Inquirer*).—A very copious and fully illustrated work on poultry will be published at our office in the course of a few weeks. No book that we know treats of capons, nor would we quote it if we did. Caponising is a barbarous and totally needless operation.

BACK NUMBER (*A. T., Neirsmat*).—Upon the receipt of four postage stamps with your directions, No. 161 will be forwarded to you by post.

CHARGE FOR GRAZING (*Cecrops*).—All depends upon the abundance of the herbage, supply of water, and other circumstances of which we have no knowledge. You had better consult some farmer in your neighbourhood; no one at a distance can advise you reliably.

BUILDING COW-HOUSE (*W. B. A.*).—It is quite impossible to answer such queries. You had better state to one or two carpenters in your neighbourhood, or elsewhere, the accommodation you require in the cow-house, &c., and then obtain an estimate. In No. 2 of "Fullarton's Home and Foreign Agricultural Miscellany," just published, there are full particulars relative to cow-houses. Any of the house-builders near London will send you an estimate; we cannot recommend one in particular.

EARWIGS (*G. C.*).—We fear you have no remedy but to kill them whenever you see them. You perhaps, are not aware that they fly.

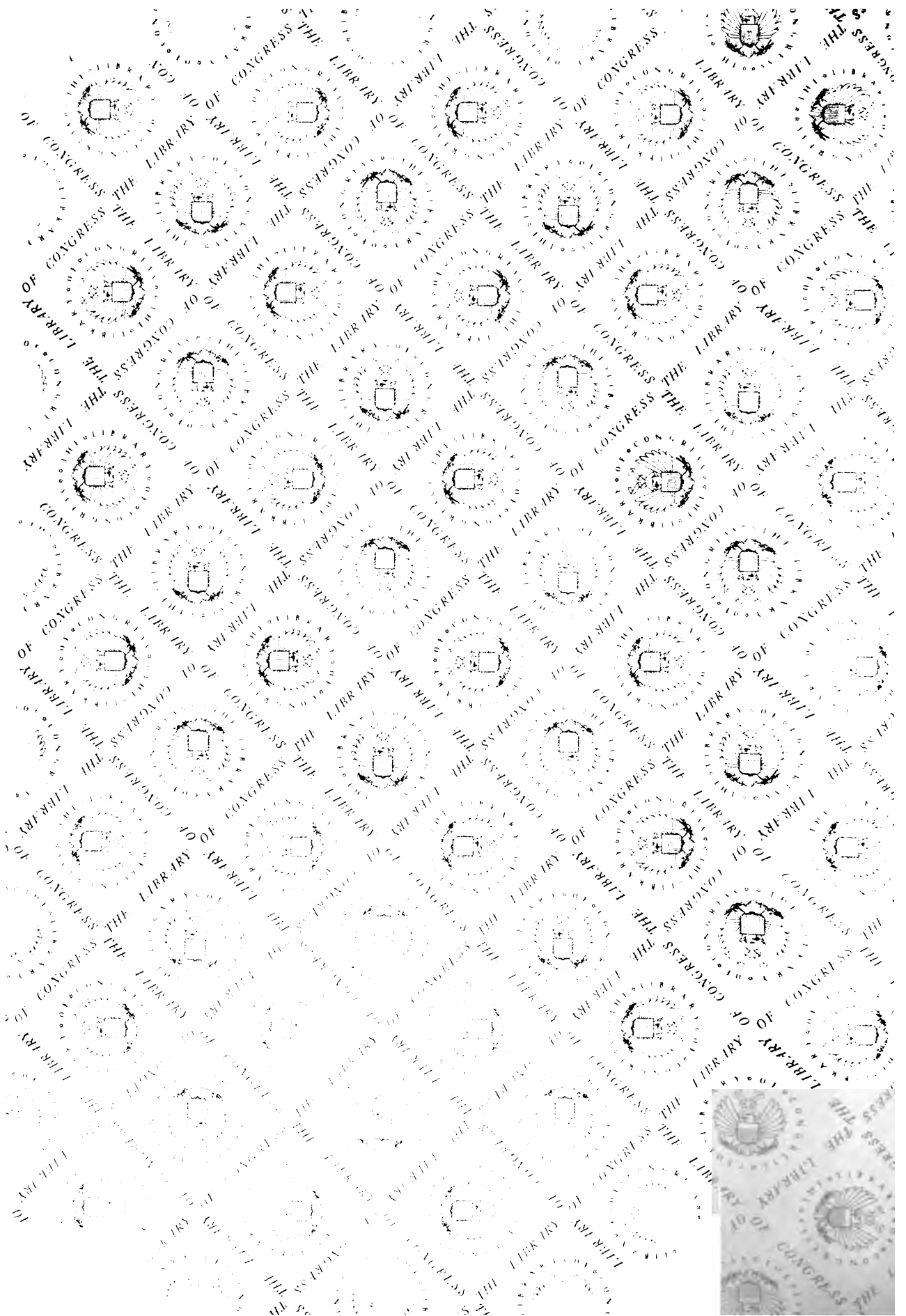
BEES DECREASING (*L. D.*).—There can be little doubt that the dwindling stock has lost its queen. The readiest mode of restoring it to prosperity would be by adding to it a small swarm.

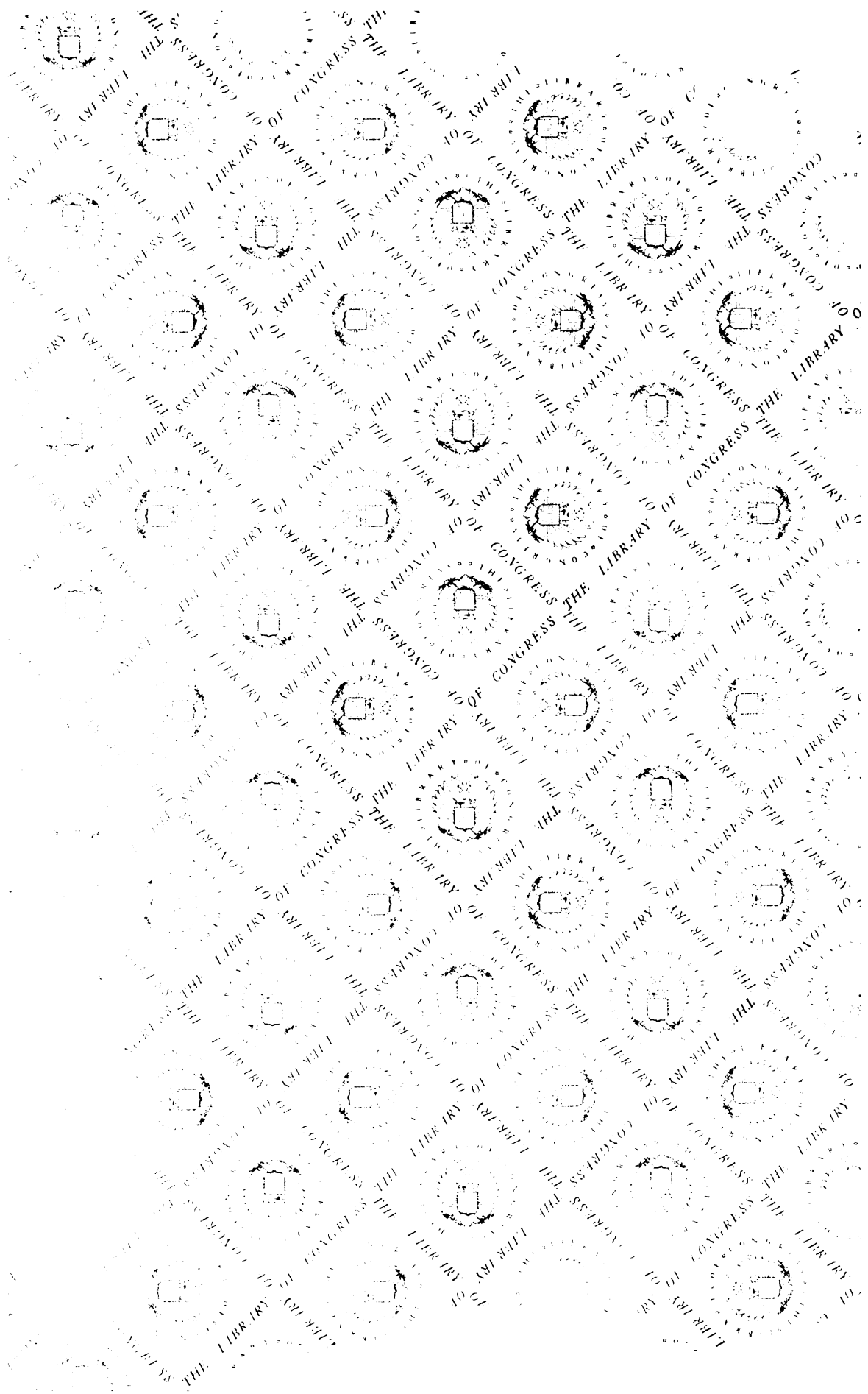
LONDON MARKETS.—JUNE 26.

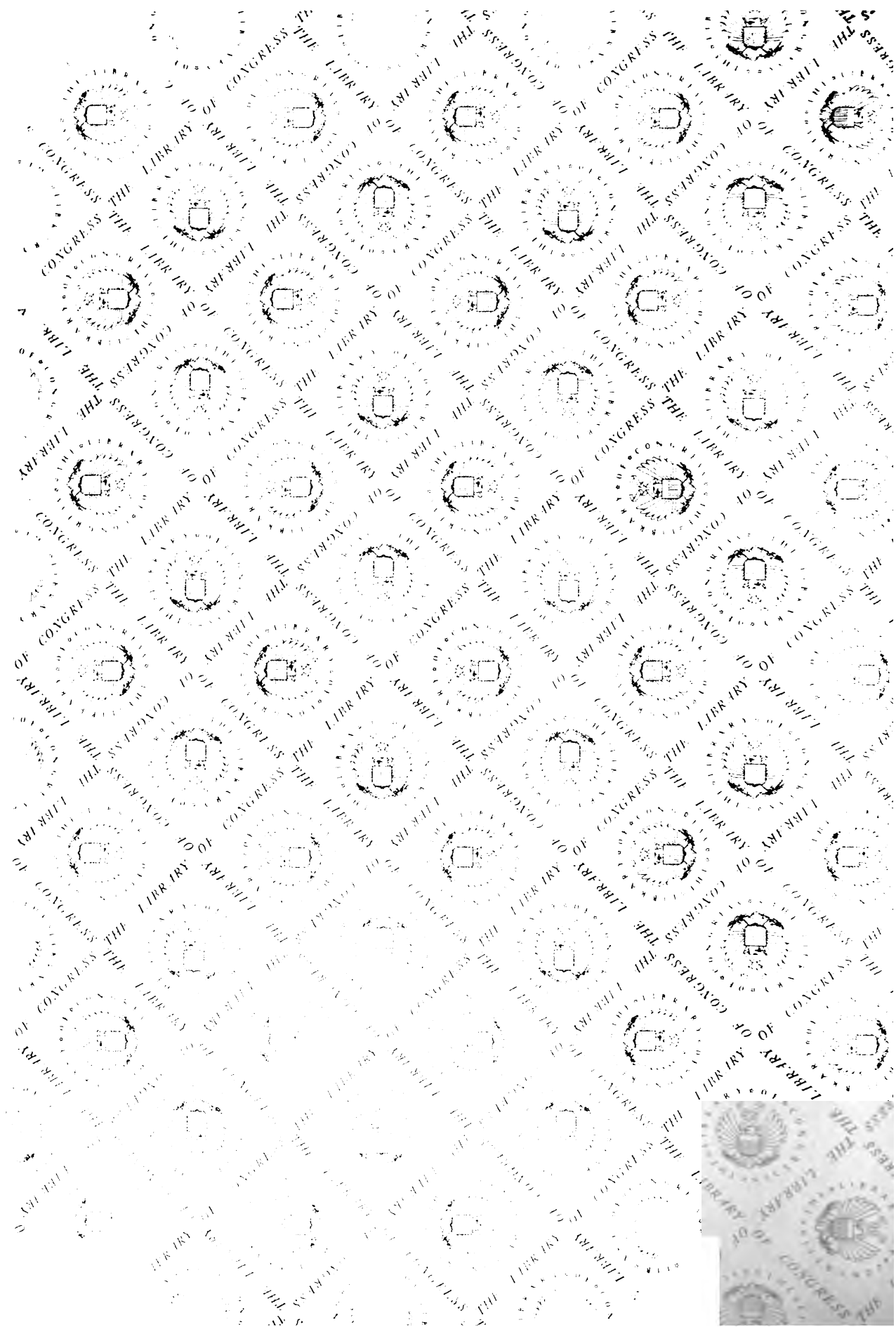
POULTRY.

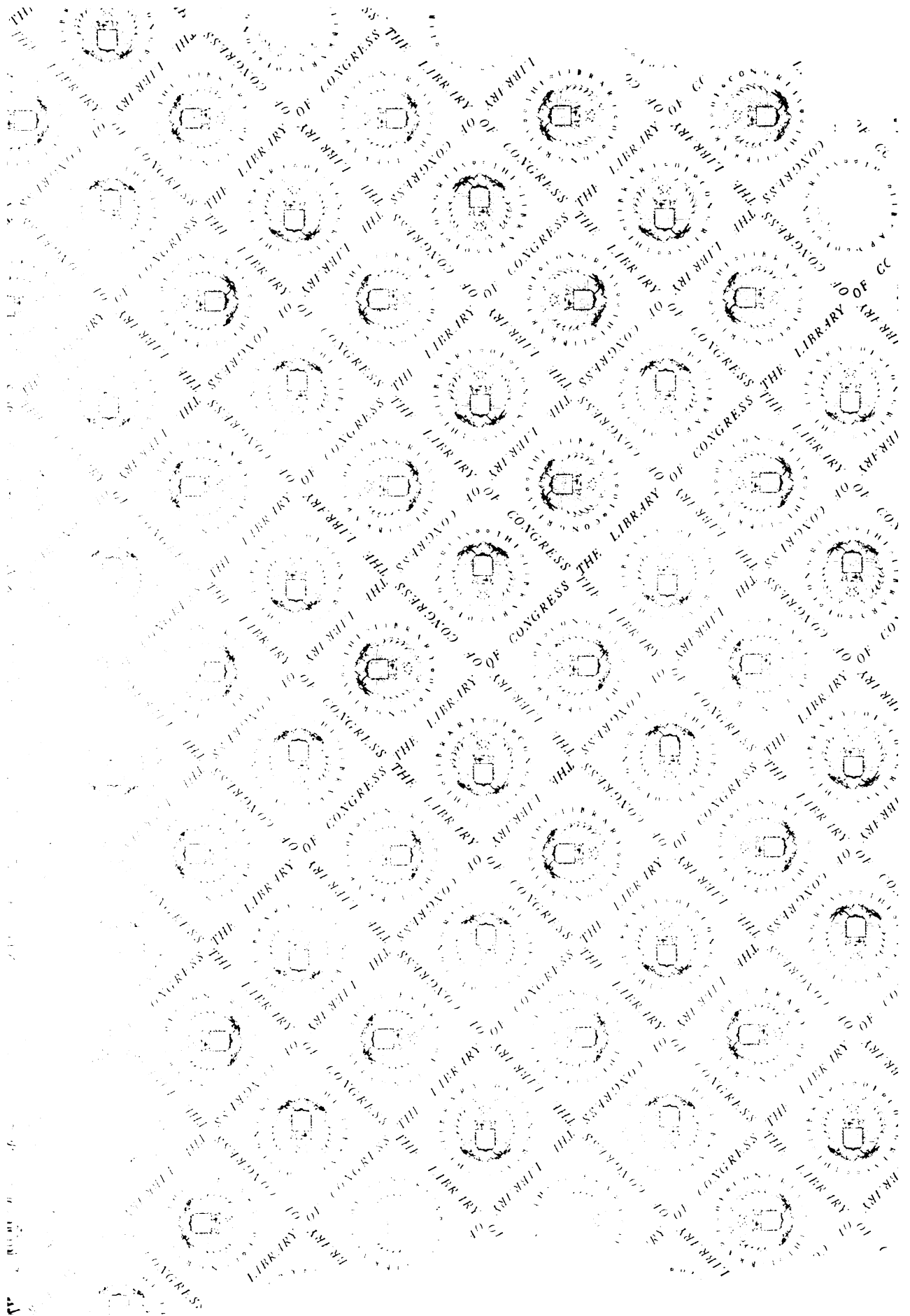
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Large Fowls	3	6	to	4	0	Grouse	0	0	to	0	0
Smaller do.	2	6	to	3	0	Partridges	0	0	to	0	0
Chickens	1	2	to	2	0	Hares	0	0	to	0	0
Green Geese	6	0	to	6	6	Rabbits	1	4	to	1	5
Black do.	3	0	to	3	6	Wild do.	0	8	to	0	9
Ducks	0	0	to	0	0	Pheasants	0	8	to	0	9

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